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Control Enactment in Global Virtual Teams

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Dedication

To Jennifer, my beautiful bride who has loved and
supported me through ten years of marriage,
and
To Jonathan and Caleb, my delightful boys
who have given me so much joy,
I love you all.

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Control Enactment in Global Virtual Teams

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This dissertation examines how control is enacted in global virtual teams. Literature on virtual teams asserts this phenomenon has features, such as limited physical observation of behavior, that diminish the usefulness of control. Theories about formal control support this prediction, although little is known empirically about the development of any form of control in such a context.

Global virtual teams are distributed work groups whose members focus on a global task, span multiple boundaries, and interact primarily via communication technologies. Control enactment refers to the development of processes and structures that attempt to influence members to engage in behaviors that accomplish collective goals.

Background literature for this study examines small groups, information technology, and control, revealing the need to examine processes and structures internal and external to the team and consider the development of control over

time. This dissertation presents a longitudinal, qualitative analysis of the communication archives for three virtual teams.

The results suggest that control enactment includes team processes such as specifying control structures, pressuring teammates, terminating team membership, as well as team and member monitoring. Team processes, along with team structures and external processes and structures, are integrated in a framework for control enactment in global virtual teams; this framework differs from much of the literature that has adopted (or actively rejected) cybernetic conceptions of control theory.

Also, the results suggest that, although members frequently relied on their teammates for information about their activities, members in some instances were able to monitor the behaviors of other members based on their electronic communication and work products. Specifying task activities to combine task coordination with technology appropriation enabled this process. As such, the concept of behavior observability may need to be reconceptualized for virtual work.

These findings are based on analyses of teams formed for an eight-week student exercise coordinated by the author. Teams in field settings or with different external environments may have occasioned different control processes from those observed here. Further, the data were primarily archival in nature, so access to member perceptions was somewhat limited. The reader should examine the appropriateness of generalization to other settings.

Table of Contents

List of Tables.....	xv
List of Figures	xvi
Chapter 1: Introduction	1
1.1. Global Virtual Teams.....	1
Definition	1
An Emerging Phenomenon	2
Uncertainty and Information	5
1.2. Control and Global Virtual Teams.....	7
Control in Global Virtual Teams: A Paradox?.....	8
Re-examining Control in the Context of Global Virtual Teams	11
1.3. Research Question and Approach	14
Research Question.....	14
Research Approach	14
1.4. Overview of the Dissertation	16
1.5. Chapter Summary.....	17
Chapter 2: Conceptual Background of Control Enactment in Global Virtual Teams	18
2.1. Foundations for Theory-Building Research on Global Virtual Teams	18
2.1.1. Conceptualization of Global Virtual Teams.....	19
Virtual Teams.....	19
Global Virtual Teams	21
2.1.2. Key Concepts and Theories.....	23
2.1.2.1. Input-Process-Outcome Framework	23
2.1.2.2. Group Development	25
2.1.2.3. Technology Effects and Appropriation	27
2.1.3. Theoretical Structure	29
Level of Analysis	29
Causal Agency.....	30
Logical Structure	31
2.1.4. Assertions about Control in Global Virtual Teams	32

2.2. Foundations for Theory-Building Research on Control.....	35
2.2.1. Conceptualization of Control	35
Defining Control	35
Contrasting Definitions of Control.....	37
Contrasting Control from Related Concepts	38
Consequences of Control	40
2.2.2. Key Concepts and Theories.....	41
2.2.2.1. Cybernetic Control Theory.....	42
2.2.2.2. Control Mechanisms and Modes.....	43
Control Modes and Mechanisms.....	43
Antecedents of Control Modes.....	44
Constructing a Portfolio of Control Modes.....	44
2.2.2.3. Control Enactment in Small Groups	45
Formation of Norms	45
Concertive Control	47
2.2.2.4. Control and Information Technology.....	48
2.2.3. Theoretical Structure	49
Level of Analysis	49
Causal Agency.....	50
Logical Structure	50
2.2.4. Assertions about Control in Global Virtual Teams	51
Behavior Observability	51
Lateral Relationships.....	53
Non-Routine, Uncertain Tasks	54
2.3. Integration of Research on Control and GVTs	55
2.3.1. Opportunities for Theory-Building on Control in GVTs	55
Control Enactment in Global Virtual Teams.....	56
Monitoring Members and Behavior Observability	58
2.3.2. Preliminary Conceptual Model	59
2.3.2.1. Model Purpose and Features	59
2.3.2.2. Internal Team Processes and Structures.....	60
Team Processes for Control	60
Team Processes for Monitoring	62
Contributing Internal Team Processes	63
Team-Initiated Structures	64
2.3.2.3. External Processes and Structures.....	64
2.3.2.4. Potential Outcomes	65
2.4. Chapter Summary.....	66

Chapter 3: Method.....	67
3.1. Research Setting.....	67
Educational Exercise	68
Subjects	69
Team Design	70
Tasks and Instructions.....	71
3.2. Data Collection.....	75
Archives	75
Surveys	75
Nature and Uses of Data Collected	77
3.3. Selection of Teams.....	78
3.4. Data Analysis	80
3.4.1. Pilot Case Studies.....	80
3.4.2. Preliminary Conceptual Model	81
3.4.3. Within-Case Analyses.....	82
Preliminary Analyses	83
Description of Episodes	85
Analysis of Processes	86
3.4.4. Cross-Case Analyses.....	87
Control Enactment in Team Processes.....	88
Control Enactment over Time and across Teams.....	89
3.4.5. Theorizing	90
Toward a Process Model of Control Enactment in Global	
Virtual Teams.....	90
Member Monitoring.....	91
3.4.6. Issues of Validity.....	91
3.5. Chapter Summary.....	92
Chapter 4: Analysis	93
4.1. Team 1.....	94
4.1.1. Introduction to Team 1	94
4.1.2. Description of Team 1 Episodes	96
Episode 1: Greeting.....	97
Episode 2: Personnel Selection	98
Episode 3: Preliminary Research	99
Episode 4: Task Plan/ Status Report	100
Episode 5: Business Plan Early	101
Episode 6: Business Plan Late	102

4.1.3. Analysis of Team 1 Processes	104
Team Control Processes	105
Team Monitoring Processes	106
Contributing Internal Team Processes	110
Contributing External Processes and Structures	115
4.2. Team 2	117
4.2.1. Introduction to Team 2	117
4.2.2. Description of Team 2 Episodes	119
Episode 1: Greeting/ Define the Project/ Chat Meeting.....	120
Episode 2: Preliminary Research	122
Episode 3: Task Plan/ Status Report	124
Episode 4: Business Plan Early	128
Episode 5: Business Plan Late	131
4.2.3. Analysis of Team 2 Processes	135
Team Control Processes	136
Team Monitoring Processes	139
Contributing Internal Team Processes	144
Contributing External Processes and Structures	147
4.3. Team 3	148
4.3.1. Introduction to Team 3	148
4.3.2. Description of Team 3 Episodes	152
Episode 1: Greeting	153
Episode 2: Personnel Selection/ Missing Members	154
Episode 3: Preliminary Research	155
Episode 4: Task Plan/ Status Report	156
Episode 5: Business Plan Early	159
Episode 6: Business Plan Late	162
4.3.3. Analysis of Team 3 Processes	167
Team Control Processes	168
Team Monitoring Processes	170
Contributing Internal Team Processes	172
Contributing External Processes and Structures	176
4.4. Chapter Summary	177
Chapter 5: Results	178
5.1. Control Enactment in Team Processes	178
5.1.1. Team Processes for Control	179
Specifying Team Structures for Control	179
Pressuring	181
Termination of Team Membership	182

5.1.2. Team Processes for Monitoring	185
Team Monitoring.....	186
Member Monitoring	187
5.1.3. Contributing Internal Team Processes and Structures	189
Specifying Processes and Structures for Task Production	189
Team Structures.....	191
5.1.4. Contributing External Processes and Structures	194
External Structures	194
External Processes.....	195
5.2. Control Enactment over Time and across Teams	195
5.2.1. Control Enactment across Teams: Compliance and Commitment.....	196
5.2.2. Control Enactment over Time: Changes and Sequences	199
Changes in Control Enactment across Episodes	199
Sequences of Team Processes	202
5.3. Chapter Summary.....	205
Chapter 6: Discussion.....	206
6.1. Toward a Process Model of Control Enactment in Global Virtual Teams	206
6.1.1. Model Overview.....	207
Purpose and Logic of the Model	207
Core Concepts	210
Key Sequences	212
6.1.2. Illustrating the Model	214
6.1.3. Triangulating the Model with Relevant Literature.....	215
Control Enactment as an Iterative, Adaptive Process	216
Control Enactment through Commitment and Compliance.....	219
6.2. Member Monitoring	222
6.2.1. Member Monitoring and Control	222
Tracking, Interpreting, and Transmitting Member Status Information.....	222
Connection to Control	223
Monitoring Behavior versus Output.....	224
6.2.2. Behavior Observability and Control	226
Information Systems	227
Observer Characteristics	228
Specification of Expected Behavior and Output	230
History and Relationships	230
Behavior Observability and Control	232
6.3. Chapter Summary.....	232

Chapter 7: Conclusion.....	234
7.1. Limitations and Future Research	234
Limitations of the Study.....	234
Control Outcomes and Responses.....	239
Implicit and Explicit Structuring.....	242
7.2. Implications.....	244
Implications for Research.....	244
Implications for Practice	247
7.3. Chapter Summary.....	249
Tables	250
Figures.....	269
Appendix A: Task Schedule and Instructions	274
A.1. Task Schedule	274
A.2. Introduction to the GVT Exercise	274
Task Summary.....	274
Student Requirements and Expectations	275
Team Formation, Management and Monitoring	276
Evaluations	276
Exercise Coordination	276
A.3. Greeting Your Team.....	277
A.4. Team-Building Decision	278
A.5. Preliminary Research	280
A.6. Task Planning.....	281
A.7. Status Report	283
A.8. Business Plan Task.....	284
Marketing Plan	285
Operating Plan.....	286
A.9. Task Planning Update Exercise.....	287
Appendix B: Selected Survey Measures	288
Level of Team Control	288
Team Control Mechanisms	288

Appendix C: Team Descriptions	290
C.1. Team 1	290
Episode 1: Greeting	290
Episode 2: Personnel Selection	290
Episode 3: Preliminary Research	292
Episode 4: Task Plan/Status Report	294
Episode 5: Business Plan Early	298
Episode 6: Business Plan Late	300
C.2. Team 2	306
Episode 1: Greeting/ Define the Project/ Chat Meeting	306
Episode 2: Preliminary Research	311
Episode 3: Task Plan/ Status Report	313
Episode 4: Business Plan Early	317
Episode 5: Business Plan Late	319
C.3. Team 3	322
Episode 1: Greeting	322
Episode 2: Personnel Selection/ Missing Members	324
Episode 3: Preliminary Research	326
Episode 4: Task Plan/Status Report	328
Episode 5: Business Plan Early	333
Episode 6: Business Plan Late	340
References	351
Vita	366

List of Tables

Table 2.1 – Key Features of the Literature on Virtual Teams.....	250
Table 3.1 – Participant Demographics	252
Table 3.2 – Reasons for Transitions to New Episodes.....	252
Table 3.3 – Primary GVT Task or Activity During Episode	252
Table 3.4 – Concepts in the Coding Scheme and Results.....	253
Table 4.1 – Team 1 Episodes: Processes, Structures, and Outcomes	254
Table 4.2 – Team 1 Processes: Change Matrix	256
Table 4.3 – Team 2 Episodes: Processes, Structures, and Outcomes	257
Table 4.4 – Team 2 Processes: Change Matrix	259
Table 4.5 – Team 3 Episodes: Processes, Structures, and Outcomes	260
Table 4.6 – Team 3 Processes: Change Matrix	262
Table 5.1 – Summary of Processes and Structures	264
Table 5.2 – Processes and Structures by Team Episode: Intensity and Significance.....	265
Table 5.3 – Sequence of Team Control Processes	266
Table 6.1 – Events in Episode 4 of Team 1: Illustrating the Model	267
Table 6.2 – Actions for Member Monitoring.....	267
Table 6.3 – Potential Information Systems in Monitoring Member Behavior....	268

List of Figures

Figure 2.1 – Preliminary Conceptual Model.....	269
Figure 3.1 – 2000 GVT Exercise Timeframe.....	270
Figure 4.1 – Email Message to Coordinator to Remove AO from Team 1	271
Figure 6.1 – Core Concepts in Control Enactment Process Model.....	272
Figure 6.2 – Compliance Sequence in Control Enactment Process Model.....	273
Figure 6.3 – Commitment Sequence in Control Enactment Process Model.....	273

Chapter 1: Introduction

This chapter explains the motivation for studying control enactment in global virtual teams. The first three sections introduce the phenomenon of global virtual teams (1.1), examine the paradoxical role of control in global virtual teams (1.2), and present the research question and approach for this study (1.3). The final sections overview the dissertation (1.4) and summarize this chapter (1.5).

1.1. GLOBAL VIRTUAL TEAMS

This section introduces global virtual teams by defining the phenomenon, describing its emergence as an organizational design tool, and highlighting the uncertainty experienced by these teams.

Definition

A distributed work group, or virtual team, is a group of geographically dispersed individuals who collaborate primarily via information and communication technologies to accomplish an organizational task (Townsend, DeMarie, and Hendrickson, 1998). Virtual teams are often temporary or *ad hoc* groups focused on global tasks whose members cross professional, organizational, temporal, and cultural boundaries (Jarvenpaa and Leidner, 1999; Lipnack and Stamps, 1997; Maznevski and Chudoba, 2000). This dissertation examines *global virtual teams* – temporary, distributed work groups whose members: (1) focus on a common, global task; (2) span multiple boundaries (e.g., geographic, temporal, professional, organizational, cultural); and (3) interact primarily via information

and communication technologies (Crisp and Jarvenpaa, 2000). Global virtual teams are an organizational design tool that can be used within or between organizations to accomplish organizational goals. The next section describes the emergence of this phenomenon.

An Emerging Phenomenon

The use of global virtual teams is growing rapidly in traditional organizations (Ancona and Caldwell, 1992) as well as emerging organizational forms such as virtual organizations (Mowshowitz, 1997). Organizations are placing proportionately less reliance on traditional face-to-face groups to make decisions, preferring instead the speed, flexibility, and knowledge benefits of organizing dispersed members in virtual teams (Huber and Crisp, 2003). The United States Department of Transportation estimated that 8.4 million U.S. workers were members of virtual teams in the mid-1990s, predicting the number would grow to 30 million by the year 2000 (Horvath and Tobin, 1999 cited in Saunders, 2000). Furthermore, a recent survey on the use of product development teams in organizations suggests that the use of *global* virtual teams is growing relative to other virtual or collocated teams (McDonough, Kahn, and Barczak, 2001). For example, most of the top software companies have development efforts involving global virtual teams with members in multiple countries (Carmel, 1997).

Several technological and business factors have contributed to the emergence of global virtual teams. First, distributed work groups, such as global virtual teams, are made possible by advances in electronic networks that allow

various forms of communication (e.g., electronic mail, chat rooms, etc.) between members located almost anywhere in the world (Jarvenpaa and Ives, 1994). Second, Townsend et al. (1998) suggest several changes in the business context promote the use of virtual teams, including: (1) increasing prevalence of flat or horizontal organizational structures; (2) emergence of environments that require interorganizational cooperation as well as competition; (3) changes in workers' expectations of organizational participation; (4) a continued shift from manufacturing and production to service and knowledge-work environments; and (5) increasing globalization of trade and corporate activity. The particular use of global virtual teams may be increasing due to this global dispersion and the need to integrate local expertise into tasks such as product development (McDonough et al., 2001).

Speculation about virtual teams holds that this type of group offers much promise as an organizational design tool. Virtual teams are noted for their ability to combine global scale and scope with local presence and familiarity (Bartlett and Ghoshal, 1990). In the process, these teams are said to have the potential to overcome traditional boundaries of space, time, and organizations (Lipnack and Stamps, 1997). For example, project teams working virtually can benefit from the best skills or knowledge, regardless of location, and work literally around the clock (Carmel, 1997).

At first glance, global virtual teams could be characterized as simply a recent manifestation of a more established lateral relationship mechanism, the task force. In contrasting types of lateral relationships, Galbraith (1974: 33)

explains, “Some processes are usually referred to as the informal organization. However, these informal processes do not always arise spontaneously out of the needs of the task. This is particularly true in multi-national organizations in which participants are separated by physical barriers, language differences, and cultural differences.” Accordingly, the task force represents a more formal (and somewhat less spontaneous) mechanism to increase the capacity of a collective to process information and deal with uncertainty. Virtual teams often serve a similar purpose, but with potentially differing processes and possibilities due to their significant reliance on computer-mediated communication across dispersed locations. For example, rather than travel the globe for a face-to-face meeting, it is now feasible for diverse group members to make real-time decisions via a chat session where participants do not leave their own offices or even see each others' faces. This “ongoing use of technology by virtual team members” is one key feature that may differentiate a virtual team from traditional face-to-face groups (Orlikowski and Iacono, 2001), including a task force.

At the same time, a global virtual team is similar to a task force in that it has implications for and is subject to uncertainty. The discussion to this point has emphasized the promise of global virtual teams as an organizational design tool; however, the challenges of this phenomenon are considered next by examining the role of uncertainty, which is commonly defined as a lack of information (e.g., Galbraith, 1974).

Uncertainty and Information

As just suggested, a global virtual team represents an organizational (or interorganizational) design tool to respond to environmental sources of uncertainty (Griffith and Neale, 2001). These teams usually operate in turbulent environments, encountering frequently changing task requirements (Mowshowitz, 1997) on tasks that are often novel and complex. However, research has not yet addressed how these teams and their members actually deal with environmental uncertainty.

Established scholarly views of organizational environments suggest the importance of uncertainty. Noting that environments impact firm success and survival, organizational theorists have categorized dimensions of an environment, such as volatility and complexity, and suggested which dimensions might be more influential to managers and organizations (e.g., Burns and Stalker, 1961; Duncan, 1972; Thompson, 1967). Scholars have also articulated the need to match organizational design features with these environmental characteristics, arguing that firm performance is contingent on the fit between the two (e.g., Lawrence and Lorsch, 1967). These arguments have then been adapted to specific technology environments (Keller, 1994) and specific decision tasks and contexts for organizations and individuals (Leblebici and Salancik, 1981). Ultimately, these environmental, technology, and task characteristics can create a state of uncertainty, where individuals lack information about what actions will produce desired outcomes (Leblebici and Salancik, 1981). This perceived environmental

uncertainty refers to the difficulty of deciding the most appropriate action, the choice that will bring the best results (Nebeker, 1975).

Also, global virtual teams may experience relational sources of uncertainty among team members. Lack of prior familiarity with distributed teammates combined with no expectation of future interaction may raise questions about the behavior that one can anticipate from teammates. Particularly at the outset, members may have no or limited basis to know whether they should trust others (Crisp and Jarvenpaa, 2000). This relational uncertainty may be heightened by salient differences among team members, such as diversity in location, language, culture, organizational affiliation, or incentive schemes.

Unfortunately, the challenge of uncertainty is compounded by additional information problems in global virtual teams. Distributed groups may not possess shared local, business, and other contextual information required to discuss issues and find solutions (Cramton, 2001; Olson and Olson, 2000; Zack, 1993). Potential problems maintaining this “mutual knowledge” include: failure to communicate and retain contextual information, difficulty communicating and understanding the salience of information, differences in speed of access to information, unevenly distributed information, and difficulty interpreting the meaning of silence (Cramton, 2001). When combined with lean communication media and potential technological problems, it may be challenging for team members to identify what information is lacking, where it resides, how to acquire it, or even where to begin identifying information problems.

Not surprisingly then, virtual teams fail more often than they succeed; this may be due in part to failure to manage the uncertainty experienced by and among group members. Uncertainty may be related to problems such as lack of shared goals, misunderstandings, role ambiguity, and social loafing that are believed to be common or worse in the virtual team context (Lipnack and Stamps, 1997; O'Hara-Devereaux and Johansen, 1994). Little is known about the ways in which individuals and groups deal with uncertainty in a global virtual team; control is one possibility that is considered next.

Control has been recognized in other contexts as a means to address uncertainty among cooperating partners. For example, Das and Teng (1998) proposed that the control one alliance partner has over another alliance partner contributes to the controller's confidence in that partner's cooperation. It is this confidence that enables initial and continuing investments in the relationship that ultimately lead to positive individual and joint outcomes. Like global virtual teams, alliances require the cooperation of independent parties to achieve shared goals, and there may be uncertainty about the extent to which desired behavior from other members is assured. This raises the question of whether or not control is a viable tool to support the deployment of global virtual teams.

1.2. CONTROL AND GLOBAL VIRTUAL TEAMS

This section highlights the potentially paradoxical role of control in global virtual teams, then motivates a more general reexamination of control.

Control in Global Virtual Teams: A Paradox?

The suggestion that control may be necessary in global virtual teams appears somewhat paradoxical. Virtual forms of organization are said to represent a shift from hierarchical to lateral relationships, which promote egalitarian processes where control – especially formal control associated with hierarchy – is less possible (Lipnack and Stamps, 1997) or even desirable (Faucheux, 1997). In this new setting, the commitment and capability of the individual partners to accomplish joint goals become more pivotal. Trust, in the absence of traditional control structures, is said to be what allows these partners to collaborate effectively (Handy, 1995; Sheppard and Tuchinsky, 1996; Lipnack and Stamps, 1997). Because of the inability to monitor behavior and impose external control, virtual workers must possess high levels of self-efficacy (Staples, Hulland, and Higgins, 1999) and organizational identification (Wiesenfeld, Raghuram, and Garud, 1999) to achieve sustained organizational benefits. However, while such factors may be pivotal to effective virtual work and worthy of additional research, control may also play a role in virtual work that has been largely ignored or discounted in research to date (Cooper and Muench, 2000).

There are several reasons why control may be important to consider in virtual forms, such as global virtual teams. First, the desire for trust does not exclude the possibility for control. In fact, Williamson (1975) suggests that trust can only exist in relationships when at least one party has significant control over the other; trust is then preferred over control because it is more efficient. Whether or not control is necessary for trust (see Sheppard and Tuchinsky, 1996 for further

consideration of Williamson's view), some recent research on virtual forms has recognized that, despite commonly held views to the contrary, control and trust are not mutually-exclusive concepts (Crisp and Jarvenpaa, 2000; Gallivan, 2001; O'Leary, Orlikowski, and Yates, 2001). Second, control research recognizes that control can exist in both lateral and hierarchical relationships (e.g., Henderson and Lee, 1992; Lazega, 2000; Kirsch et al., 2002), both of which may occur in global virtual teams. The assumption of purely lateral virtual forms is contrary to findings of hierarchy in the communication patterns of virtual groups (Ahuja and Carley, 1999) and does not recognize that many virtual teams have members from the same formal organization. Taken together, these observations address assumptions that inhibit research on control in virtual work; unfortunately, researchers often de-emphasize organizational control when studying technologies that support cooperative work (Kling, 1991).

Yet, as practitioners have attempted to implement virtual work arrangements such as telework, a perceived lack of control has been identified as an obstacle to more wide-spread adoption. Telework refers to the practice of an employee working regularly at a different location from the employee's manager and co-workers, often for the personal benefit of the employee (Kurland and Egan, 1999). The Computer Science and Telecommunications Board commented in their Research Recommendations to Facilitate Distributed Work (1994):

Supervision of remote workers has been the primary stumbling block for many organizations considering telecommuting. The perennial question is, *How can I tell they're working when they're not here in the office?* [M]anagers and workers who prefer command-and-control organizational styles may find it uncomfortable, if not impossible, to manage and work at a distance. *Thus, in the short term, the perceived loss of control of remote*

workers is a concern that could inhibit more widespread implementation of distributed work practices. [emphasis added]

As a related type of distributed work, global virtual teams may also be impacted by similar perceptions of a lack of control.

Some research on virtual work does suggest the presence of control; here I mention several papers that relate to control without explicit consideration of control in virtual teams. Ahuja and Carley (1999) found some evidence of hierarchy in communication patterns in virtual organizations, although they did not explore specific control behaviors associated with hierarchical communication. Adami (1999) stressed the importance of autonomy for professionals in an examination of control over newspaper journalists who worked regularly at different locations outside of the office. This research suggests that organizational controls are more important for less experienced professionals while professional controls are used more often for experienced personnel. Depickere (1999) emphasized commitment over control in an examination of virtual work, while recognizing that control and monitoring can be enabled in some distributed situations through the use of information technology. Gallivan (2001) suggests that control is an important element in open source software projects accomplished through virtual organizations. O'Leary et al. (2001) examined control in the Hudson Bay Company as a historical example of a distributed work organization that predates the current use of information and communication technologies. These articles support the possibility that control has implications for global virtual teams, while the dearth of research on this subject suggests the need for further inquiry.

Re-examining Control in the Context of Global Virtual Teams

Examining control in the context of global virtual teams may have important implications for the control literature. *Control* is defined in this dissertation as *attempts to influence members of a collective to engage in behaviors that lead to the attainment of collective goals* (Flamholtz, Das, and Tsui, 1985). Consistent with recent research on control (e.g., Henderson and Lee, 1992; Jaworski, 1988; Kirsch, 1996 and 1997; Merchant, 1988), this definition conceptualizes control in a broad, behavioral sense that includes all organizational mechanisms that help ensure organizational members pursue organizational goals (Merchant, 1988).¹ To build a portfolio of control mechanisms (Kirsch, 1997), controllers implement processes (e.g., socialization) and structures (e.g., deadlines) that can be formal (e.g., written sales quota) or informal (e.g., implicit monitoring routine). Here, I briefly mention opportunities to develop our understanding of control by examining global virtual teams.

Control among peers – Much of the control literature emphasizes formal control within a hierarchical setting, having less to say about how to exercise control in non-hierarchical relationships among relative equals (Sheppard and Tuchinsky, 1996). In those situations without a common hierarchical structure to rely upon, the basis or authority for establishing formal control may be unclear. As such, research on non-hierarchical relationships tends to emphasize informal control mechanisms. For example, research on teams has identified processes

¹ Although some control research includes organizational structure and other forms of coordination within the concept of control (e.g., Edwards, 1981; Yates, 1989), this dissertation follows control research that considers these to be distinct but related concepts (see Ouchi, 1977).

(e.g., pressuring, “norming”) and structures (e.g., values, norms, routines) that are relevant to informal control among team members (Tuckman, 1965; Hackman, 1976; Hare, 1976; Barker, 1993). Following recent examples that highlight the use of both formal and informal control mechanisms in lateral relationships (e.g., Kirsch, 1997; Das and Teng, 1998), an examination of control among members of global virtual teams could provide new insights into how peers enact a variety of control mechanisms.

Enacting control in non-routine, uncertain tasks – Much of the research on virtual forms of organizing makes the assumption that higher levels of uncertainty constrain the effective use of control (Mayer, Davis, and Schoorman, 1995; Miles and Snow, 1986). That is, how can you implement control when work steps and responsibilities are not pre-defined or stable? For external managers of a global virtual team, monitoring is likely to be obscured by flexible and changing tasks performed by a group; it might be difficult to pre-establish evaluation criteria and identify individual contributions. For this reason, some researchers have gone so far as to say control theory is only relevant to routine tasks with pre-existing standards for behavior (Green and Welsh, 1988). In this interpretation, control would be considered irrelevant to much organizational work, including most virtual team projects. On the contrary, Kirsch has argued that control is applicable to complex, non-routine tasks (1996), proposing a theory about how controllers construct a portfolio of control mechanisms (1997). This research in particular highlights the need for additional process-oriented

examination of how control develops and changes over time in non-routine and uncertain tasks.

Observability of behavior – As noted above, the virtual team literature suggests that the inability to physically observe behavior precludes the ability to monitor or control behavior (Wiesenfeld et al., 1999) and may interrupt processes of norm formation that are based on observing behavior (Furst, Blackburn, and Rosen, 1999). This understanding is consistent with earlier control research that equated behavioral observation with physical sight (e.g., Ouchi, 1978). However, more recent literature recognizes that physical observation is only one means of obtaining information about behavior; it is the overall ability to gather information about behavior that impacts the use of control (Eisenhardt, 1985; Kirsch, 1996). It is possible that virtual team research has simply not taken advantage of this understanding. It is also possible that the control literature's conceptual understanding of monitoring needs to be further refined to explain these non-physical sources of behavioral information. For example, what information do electronic outputs convey about the behavior of a distant team member? In addition, noting the lack of mutual knowledge among members (Cramton, 2001), will teammates be able to interpret available information and appropriately evaluate behaviors? As such, this issue raises the need for further examination of monitoring, particularly among people who are not physically collocated.

The next section turns to the research question and approach guiding this dissertation.

1.3. RESEARCH QUESTION AND APPROACH

Having highlighted the need for research on control in global virtual teams and the opportunity to contribute to theory, this section introduces the specific research question and approach guiding this dissertation.

Research Question

This dissertation examines the research question: *how is control enacted in global virtual teams?* That is, the research explores the use of control, how it develops in these teams, and how control changes over time. The objective of the dissertation is to *build theory about control in global virtual teams*, reexamining existing theory on control, groups, and information technology in light of this new organizational context. *Particular emphasis is placed on how control develops among peers and upon the ability to monitor without physical sight of teammates.* The resulting thesis of this dissertation is that control *can be enacted* in global virtual teams and that some control may be necessary for the successful operation of these teams.

Research Approach

As part of a program of research on global virtual teams, the method for this dissertation reflects a larger set of research questions and objectives than those just identified. First, the method was designed to be able to explore control in global virtual teams using qualitative and quantitative analyses. Although Crisp and Jarvenpaa (2000) made initial attempts to quantitatively examine control in a prior study, the measures of control and control mechanisms were only taken at the end of the project, and several constructs showed less desirable

measurement properties. The current method addresses the measurement weaknesses of the previous quantitative approach while providing the opportunity for this dissertation's qualitative analysis. Second, the method was designed to replicate and strengthen prior quantitative findings about the development of trust among members of global virtual teams. Crisp and Jarvenpaa (2000) found evidence for several propositions about trust development in this context. The current method addresses several limitations of the previous unpublished study while replicating its findings about trust. Third, the method was designed to examine the relationship between trust and control over time in global virtual teams. Despite common assertions that trust and control are substitutes or even opposites, Crisp and Jarvenpaa (2000) found initial quantitative evidence for a positive relationship between trust and control. The current method provides more appropriate measures to quantitatively explore the relationship of trust and control over time in global virtual teams.

Although it may be helpful to be aware of these objectives when considering the method for this dissertation, all of the research objectives beyond the *qualitative examination of control* are outside the scope of the dissertation. As such, the subsequent chapters do not provide the conceptual foundations, method, results, and discussion of the findings for the quantitative studies.

It is also important to note the scope and major limitations of the study. While the findings may have implications for other virtual teams and virtual work, the study was based on analyses of three global virtual teams with members from one student exercise. Other global virtual teams in field settings or with

different external environments may have occasioned different control processes than those observed in this research. Further, the data were primarily archival in nature, so access to member perceptions was somewhat limited. Taken together, the reader should examine the appropriateness of generalizations of the findings to other contexts.

The next section provides an overview of the dissertation.

1.4. OVERVIEW OF THE DISSERTATION

This section offers a “roadmap” of the subsequent chapters of the dissertation, which include:

Chapter 2: Conceptual Background of Control Enactment in Global Virtual Teams – Chapter 2 introduces prior research related to global virtual teams and control, emphasizing literature that provides a foundation for theorizing about control enactment in global virtual teams. Beyond identifying opportunities to contribute to theory, chapter 2 presents a preliminary model of control in global virtual teams that is used to guide the theory-building process.

Chapter 3: Method – Chapter 3 describes the data collection and analysis approach for this qualitative study. This dissertation is based on a longitudinal, qualitative analysis of the communication archives for three global virtual teams formed for an eight-week student exercise coordinated by the author.

Chapter 4: Analysis – Chapter 4 presents detailed analyses of three global virtual teams to illustrate the analysis approach and show the underlying support for the results.

Chapter 5: Results – Chapter 5 summarizes the results of cross-case analyses. Control enactment in these teams included specifying control structures (e.g., proposing norms, setting deadlines), pressuring teammates for commitment or compliance, and termination of team membership; these activities were closely tied to group and member monitoring processes. Chapter 5 also examines the use of these processes over time and across teams.

Chapter 6: Discussion – Chapter 6 discusses the meaning of the results by presenting a process model of control enactment in global virtual teams and by more deeply examining monitoring of members within global virtual teams.

Chapter 7: Conclusion – Chapter 7 concludes with limitations and implications of the study as well opportunities for future research.

1.5. CHAPTER SUMMARY

This chapter introduced the reader to the phenomenon of global virtual teams, provided motivation for the study of how control is enacted in global virtual teams, and gave a brief overview of the dissertation. The next chapter deepens the discussion of global virtual teams and control by identifying literature that provides some foundation for theory-building related to control in global virtual teams.

Chapter 2: Conceptual Background of Control Enactment in Global Virtual Teams

The purpose of this chapter is to introduce key concepts and theories that informed my theorizing about control enactment in global virtual teams and to identify opportunities to enrich theory on control and virtual teams through their joint examination. The first section describes foundations for theory-building about global virtual teams, and the second section presents foundations for theory-building research on control. Both sections (1) explain the conceptualization (e.g., global virtual teams, control), (2) introduce key concepts and theories, (3) explore the theoretical structure of these theories, and (4) summarize assertions about control in global virtual teams. The final section integrates these foundations by identifying opportunities for theory building and presenting the preliminary conceptual model that guided this research.

2.1. FOUNDATIONS FOR THEORY-BUILDING RESEARCH ON GLOBAL VIRTUAL TEAMS

This section introduces the conceptual foundations that informed my theorizing about global virtual teams; the concepts and theories I identify are drawn from well-established research on small work groups and information technology (IT) as well as the young literature on virtual teams. As explained below, a virtual team is a special case of a small work group, suggesting that the literature on face-to-face groups may provide some insights. Furthermore, as an IT-enabled phenomenon, several literatures on information technology may be

relevant. These literatures include computer-mediated communication (e.g., Spears and Lea, 1994), group decision support systems (see review by Fjermestad and Hiltz, 1999), computer supported cooperative work (e.g., Dourish and Bellotti, 1992), and IT and organizational change (see critique by Markus and Robey, 1988). Although the literatures on collocated and IT-enabled small groups are becoming more intertwined, much of what we know about small work groups still comes from research on traditional face-to-face groups (see review article by Mennecke, Hoffer, and Wynne, 1992). As such, the sections below build upon the small group, IT, and virtual team literatures to offer a conceptualization of global virtual teams (2.1.1), identify key concepts and theories (2.1.2), highlight issues related to theoretical structure (2.1.3), and summarize assertions about control in global virtual teams (2.1.4).

2.1.1. Conceptualization of Global Virtual Teams

To build theory about control enactment in global virtual teams, it is important to begin with a clear conceptualization of the phenomenon. That is, what is a global virtual team? How is a global virtual team similar to or different from other virtual and collocated teams? This section first describes the phenomenon of virtual teams in general and then considers the special case of *global* virtual teams.

Virtual Teams

A virtual team is a group of geographically dispersed individuals who collaborate primarily via information and communication technologies to accomplish an organizational task (Townsend et al., 1998). This definition

suggests two ways in which a virtual team could be differentiated from other small work groups; distinctions are offered by elaborating on each word of the name.

- Virtual – Distributed work groups differ from collocated work groups in that at least some of their members are physically separated by time and/or geography. Maznevski and Chudoba (2000) note that most authors use the term “virtual” to emphasize the primary reliance on computer-mediated communication that is used to transcend boundaries among distributed members. (Otherwise, the terms “virtual” and “distributed” are used interchangeably.)
- Team – Following the tradition in the small group literature, the moniker “team” (as opposed to “group”) signifies a higher level of process and outcome interdependence among members (Furst et al., 1999).

Thus, a virtual team is conceptualized here as a special case of a small work group – one with dispersed members that places heavier reliance on communication technologies.

Admittedly, scholars debate the assertion that virtual teams are qualitatively different from other small work groups. A symposium at the 2000 Academy of Management Meeting posed the question of whether or not the concepts and theories developed for face-to-face groups could or should be extended to virtual teams. In a subsequent research commentary where they

called for greater theorizing about the information technology artifact, Orlikowski and Iacono (2001) critiqued this symposium:

To our surprise, a vote taken at the end of the session showed that almost half the audience believed that [virtual and collocated] teams were the same. In essence, they were saying that the ongoing use of technology by virtual team members did not matter. With such a starting premise, we can hardly expect these researchers to theorize how virtual team members engage with IT artifacts in the course of working, and to consider the consequences of such engagement for changes in work practices and modifications in the use and design of work technologies.

The potential for differences between virtual and collocated teams suggests the need for further inquiry into this phenomenon.

In addition, it is important to identify characteristics that distinguish between types of virtual teams. Distinctions are necessary because all virtual teams are unlikely to have the same characteristics or operate in the same manner (Jackson, 1999). The next section clarifies the focus of this research on global virtual teams.

Global Virtual Teams

This dissertation examines *global* virtual teams (Jarvenpaa and Leidner, 1999; Maznevski and Chudoba, 2000). The task and relationships among virtual team members are often of a global nature (Jarvenpaa and Leidner, 1999); the adjective “global” highlights this culturally-diverse, boundary-spanning membership with a common, international task. To summarize then, a *global virtual team is a temporary, distributed work group whose members: (1) focus on a common, global task; (2) span multiple boundaries (e.g., geographic, temporal, professional, organizational, cultural); and (3) interact primarily via information*

and communication technologies rather than face-to-face (Crisp and Jarvenpaa, 2000).

Thus, a global virtual team is conceptualized here as a special case of a small work group – one with distributed members, temporary duration, global task, and other boundary-spanning features such as differing cultures and time zones. Like other virtual teams, global virtual teams place significant reliance on computer-mediated communication. Unlike some virtual teams, global virtual teams have a temporary, global task with a boundary-spanning team membership.

Global virtual teams are a useful focus for at least two reasons. First, a recent survey on the use of product development teams in organizations suggests that the use of global teams is growing relative to other virtual or collocated teams (McDonough et al., 2001). If a global virtual team is different from other virtual or collocated teams, managers will want to understand how to manage this particular team configuration. Second, collaboration in a global virtual team presents some of the most complex issues (e.g., culture, time zone, organizational boundaries, lack of common context) for team members to experience, managers to supervise, and researchers to analyze. In this sense, a global virtual team may be considered the extreme case in which to increase understanding of small works groups, in general, and virtual teams, in particular. Thus, given this dissertation's purpose of enriching theory, the choice to study global virtual teams is appealing because unique or "revelatory" cases are often useful for building theory (Yin, 1994) and because the phenomenon of virtual teams in general is still not well understood (Majchrzak et al., 2000).

The next section turns to key concepts and theories that provide a foundation for theory-building about global virtual teams.

2.1.2. Key Concepts and Theories

To build theory about control enactment in global virtual teams, it is important to identify the key concepts and theories that help us understand the phenomenon. That is, what kinds of concepts and theories provide insights about global virtual teams? Here, I introduce selected literature on small groups and information technology that illustrate: (1) the input-process-outcome framework, (2) group development, and (3) technology effects and appropriation. Where possible, I review literature on virtual teams within these discussions (see Table 2.1 for a summary of the concepts used in virtual team articles and books).

2.1.2.1. Input-Process-Outcome Framework

One feature of literature on face-to-face groups is that it usually adopts McGrath's (1984) input-process-outcome perspective (Marks, Mathieu, and Zaccaro, 2001; Stewart and Barrick, 2000). That is, it has tended to focus on inputs (e.g., design of self-managing teams) and processes (e.g., cohesiveness) and their impact on outcomes such as group performance (e.g., effectiveness) or individual attitudes (e.g., satisfaction).

Scholars have studied a variety of inputs related to group design. Researchers have shown particular interest in self-managing teams, where members as a group are given the authority to govern more of their own affairs (Cohen and Ledford, 1994; Cummings, 1978; Manz and Sims, 1987). Topics of interest might include the motivational benefits to members of these teams or

situations where this leadership structure is better than more traditional groups. For example, Liden, Wayne, and Bradway (1997) found that this type of group is usually more effective on tasks with higher interdependence. Other areas of research related to design include the impact of diversity among team members upon group processes (e.g., conflict) or outcomes. For instance, Ancona and Caldwell (1992) explored the impact of design and demography on new product team performance.

Small group researchers have also studied the role of group processes. In some studies, processes are the mediating variables between inputs and outcomes. For example, Stewart and Barrick (2000) proposed and found that intrateam process mediated the relationship between task interdependence and performance. In other studies, processes serve as the focal point of the study, although their role as independent, mediating, or dependant variable is still clearly identified within the overall input-process-outcome framework. For example, Edmondson (1999) studied psychological safety, Gibson (1999) examined group efficacy, and Waller (1999) considered the timing of adaptive responses to non-routine events.

The initial interest in global virtual teams comes primarily from the unusual inputs of these teams. First, literature emphasizes the boundaries created by group design – geographic, temporal, professional, organizational, cultural – and the potential for virtual teams to span these boundaries (e.g., Lipnack and Stamps, 1997). Second, in this technology-enabled phenomenon, researchers have examined the impact of technology on group processes and outcomes (see section 2.1.2.3 below for further discussion of technologies). Some studies

heighten this feature by constraining the available media and studying communication processes and resulting outcomes. For example, studies combine an examination of communication with trust (Jarvenpaa, Knoll, and Leidner, 1998; Jarvenpaa and Leidner, 1999) or conflict (Montoya-Weiss et al., 2001). Finally, other inputs considered include: task (Cramton, 2001), external process structures (Montoya-Weiss et al., 2001), resources (Furst et al., 1999), and other features of the specific organizational context (Majchrzak et al., 2000).

The virtual team literature also gives some consideration to group and individual outcomes. At the group level, authors suggest impacts on performance (Montoya-Weiss et al., 2001), effectiveness (Furst et al., 1999), cohesiveness (Knoll and Jarvenpaa, 1998), decision quality (Maznevski and Chudoba, 2000), and solution feasibility (Majchrzak et al., 2000). At the individual level, authors have examined satisfaction (Warkentin, Sayeed, and Hightower, 1997), commitment (Maznevski and Chudoba, 2000), and trust (Jarvenpaa et al., 1998).

2.1.2.2. Group Development

One longstanding pursuit in the small group literature is to understand how groups develop and change over time (e.g., Gersick, 1988; Hare, 1976; McGrath, 1990 and 1991; Tuckman, 1965). Theories of group development offer several perspectives about what processes are expected to occur and when they are likely to occur (Mennecke et al., 1992). For example, Tuckman's (1965) famous four-stage model – forming, storming, norming, and performing – suggests definite processes in a sequential order of progression. Other types of models propose that group processes are cyclical (e.g., Hare, 1976) or non-

sequential (e.g., Gersick, 1988; McGrath, 1990 and 1991). The more recent developmental models are non-sequential (i.e., events are assumed to result from contingent factors that change a group's focus), and these models give greater consideration to the larger system by which group processes may be influenced (Gersick, 1988; Mennecke et al., 1992).

Theories of how groups develop are particularly relevant when the interest is in studying specific group processes, such as those related to control. Some theories propose that control processes would occur in a specific sequence or a certain phase of group life (e.g., Bales, 1950; Hare, 1976; Tuckman, 1965). For example, Mennecke et al.'s (1992) integration of the literature implies that control enactment would be particularly relevant to the third phase of group life where norms are formed and in the latter phases when norms are enforced. As such, theorizing about global virtual teams (and control in particular) may be aided by examination of how these groups develop and change. This discussion is important because the dissertation's research question (i.e., how is control enacted in global virtual teams?) may be viewed from a developmental perspective.

Few virtual team papers build explicitly on the developmental models from the small group literature, but some find results comparable to non-sequential models. For example, Maznevski and Chudoba (2000) described a "temporal rhythm" of interaction intensity that they compared to a heartbeat pacing the actions of more successful teams.

2.1.2.3. Technology Effects and Appropriation

Researchers have shown great interest in the properties of media that permit or obstruct conveying information. First, Media (or Information) Richness Theory attempts to explain media selection by managers (Daft and Lengel, 1986). The theory holds that richer media have the ability to change understanding in less time and, therefore, will be used for more uncertain and equivocal problems. The theory assumes that face-to-face is the richest form of communication while written methods are the lowest. More recent research on computer-mediated communication has challenged some of these notions, showing that media choice is not fully determined by task (Markus, 1994) and that additional time can help make results more similar between face-to-face and computer-mediated groups (Walther, 1996). Second, some research has attempted to understand how technologies can address limitations of mediated communication. Dourish and Bellotti (1992) identified the need for awareness – “*understanding of the activities of others, which provides a context for your own activity*” (107, emphasis in original). While collaborators could inform each other of their activities (adding an extra burden on the informing member), these researchers designed a system to provide some of this awareness information without any effort on the part of the members. As an example from the virtual team literature, Warkentin et al. (1997) compared face-to-face teams to asynchronous virtual teams, finding that face-to-face teams outperformed virtual teams and that members of face-to-face teams had a better experience during the three week period.

In recent years, scholars have proposed that theories should treat structure, such as technology, as both form and process (Barley, 1986). Drawing upon Structuration Theory (Giddens, 1976, 1979, and 1984), the following works exemplify this approach:

- Barley (1986) examined role changes in radiology departments after the introduction of CT scanners. He suggests that viewing structure as a process rather than an entity allowed explanation of how identical technologies led to similar structuring processes but divergent forms of organization.
- DeSanctis and Poole (DeSanctis and Poole, 1994; Poole and DeSanctis, 1990) proposed Adaptive Structuration Theory to draw attention to the types of structures provided in specific technologies as well as the structures that emerge as people interact and appropriate the technologies.
- Yates, Orlikowski, and Okamura (1999) identify genres as structures of a community as well as explicit and implicit structuring of those genres as ways to reinforce and change social interaction within a community.

Together, these works are representative of trends toward greater consideration of structure as both form and process, providing sensitivity to the appropriations of technology as well as characteristics of the structures that may influence actors.

Some virtual team literature explores how virtual teams appropriate technology and other structures to accomplish group purposes. Majchrzak, Rice,

Malhotra, and King (2000) studied a virtual team's ability to appropriate and adapt technology, group, and organizational structures. Also, Maznevski and Chudoba (2000), building on Adaptive Structuration Theory, found that effective media choice in three global virtual teams within the same organization was consistent with Media Richness Theory when the structure of the task and context were taken into consideration; they offered propositions for how the fit of these characteristics contributes to effectiveness.

2.1.3. Theoretical Structure

Since this dissertation is oriented toward theory-building, I also paid attention to the theoretical structure of the research about virtual teams. Following Markus and Robey (1998), I considered level of analysis, causal agency (i.e., nature of causality) and logical structure (i.e., temporal aspects of the theory). Unfortunately, authors of the virtual team literature I reviewed were not always explicit about these matters, so I made reasoned inferences when necessary (see Table 2.1 for a summary of the theoretical structure used in these articles and books).

Level of Analysis

A thorough examination of teams requires an understanding of the phenomenon at multiple levels of analysis. These levels include:

- Individual – Members possess their own dispositions, attitudes, beliefs, intentions, and behaviors; these individuals are nested in local and organizational contexts that may also have unique characteristics.

- Subgroup – Subgroups may arise from the collocation of individuals or from other shared characteristics or behaviors that unite smaller segments of the larger team.
- Group – A group, comprised of these members and subgroups, has its own structures, inputs, processes, and outcomes.
- Organizational – As noted above, individuals, and therefore the group, are nested in one or more organizational contexts that have unique managers, structures, processes, or other characteristics that can impact a group.

The potential for several levels of analysis suggests the need for clarity about the unit of analysis as well as consideration of cross-level effects.

Across the articles in this review, authors have examined features of individuals (e.g., Montoya-Weiss et al., 2001) and subgroups (e.g., Cramton, 2001) within virtual teams, the group as a whole (e.g., Jarvenpaa and Leidner, 1999), and the organizational environment (Townsend et al., 1998) in which these individuals and groups are situated. Although several of the articles mention two levels of analysis, very few explicitly develop and consider the interactions between two or more levels of analysis. Examination of the multi-level nature of global virtual teams is a promising topic for future research as well as an important means of enriching studies focused on other topics.

Causal Agency

Causal agency, in this context, refers to a preference for the technological imperative (the impact of technology), organizational imperative (the choice of

actors), or an emergent perspective (interaction of actors and structures) (Markus and Robey, 1988). Warkentin et al. (1997) exemplify the technological imperative by analyzing the impact of technology on group cohesion and member satisfaction. McDonough et al. (2001) represent the organizational imperative by surveying actors' choices about the types of teams they will deploy and by advocating strategies for effective implementation. Majchrzak et al. (2000) display features of the emergent perspective; they found that group adaptation and appropriation of structures was impacted by the malleability of the structures and was often occasioned by discrepant events. Although all of these perspectives appear to be represented, the general framing of the literature follows the logic of the technological imperative; that is, what is the impact of a media- or information-constrained context on group processes or outcomes? As such, a common motivation of this literature – despite some having different or more elaborate views of causal agency – is that media and other structural features of virtual teams may alter how people work together in groups.

Logical Structure

The logical structure of the virtual teams literature has several features. As a recent area of inquiry, it is not surprising that some articles (e.g., Knoll and Jarvenpaa, 1998) are more descriptive in nature and do not develop or test formal theories, propositions, or hypotheses. While some of the articles look at static relationships (e.g., Montoya-Weiss et al., 2001), several show some sensitivity to temporal issues. These still may be examined in a variance framework (e.g., Jarvenpaa et al., 1998) or as theoretical propositions about processes (e.g.,

Maznevski and Chudoba, 2000) rather than as a process theory. The literature suggests the need to address changes in processes over time.

Since this dissertation examines control in global virtual teams, the next section presents assertions about control from the virtual teams literature.

2.1.4. Assertions about Control in Global Virtual Teams

With some exceptions (discussed below), the following statements represent common perceptions of control in the literature:

The traditional methods of control and influence that we are socialized to utilize as children may not be effective in computer-mediated environments. Users of [computer-mediated-communication systems] must exercise leadership and influence with little means of social control, and some members may become “lost in cyberspace” and may “drop out” of virtual teams in the void of familiar communication patterns (Warkentin et al., 1997: 989).

First, the global virtual context renders other forms of social control, such as direct supervision, inoperable. Second, other factors known to contribute to social control and coordination, such as geographical proximity, similarity in backgrounds, and experience, are often absent (Jarvenpaa et al., 1998).

This section highlights several assertions about control and monitoring that are currently reflected in the literature. The assertions come from explicit statements by the authors or from their implicit assumptions about the phenomenon. The assertions are then followed by evidence of control or calls for research on control found in the literature.

The primary arguments that control is inoperable in virtual teams suggest that structural characteristics hinder effective monitoring and control. First, Lipnack and Stamps (1997) point to the diminished role of traditional authority. Bureaucracies, with their rules, regulations, and procedures, derive authority from

organizational hierarchy, but members of virtual teams may not share a common hierarchy that would enable traditional control mechanisms. Second, the inability to physically observe teammates – described as “reduced visibility” by Furst et al. (1999) – may have implications for monitoring and norm formation. Although members need to observe how others interact to form norms, “In many virtual contexts, it is nearly impossible for virtual team members to actually observe those behaviours used to establish informal rules or norms” (Furst et al., 1999: 258). Furthermore, cultural differences may also obstruct the formation of norms (Furst et al., 1999). Finally, Cramton (2001) explained that a lack of mutual knowledge may lead to failures in information exchange and interpretation and contribute to causal attributions that harm the group. Although that paper does not examine control, this process appears relevant to monitoring and could contribute to destructive control behaviors.

On the other hand, the literature contains some conflict over the potential for control, specifically external control. Townsend et al. (1998) suggest that control is an important activity for external managers of virtual teams. Beyond establishing a clear administrative and reporting relationship between the team and its external manager(s), external managers also need to monitor and set clear expectations for team performance, criteria for team evaluation, and schedules. And, they suggest possibilities for external monitoring of virtual teams:

Because of the dispersion of team members, effective supervision and control of the virtual team may appear problematic. However, the virtual team’s rich communicative environment, along with the system’s capacity for archiving data and communications, actually empowers considerably more managerial monitoring than is possible in traditional environments.

Managers could, for example, actually view archived recordings of team meetings to assess member contribution and team progress. (25)

In contrast, Majchrzak et al. (2000) discuss a case where external managers attempted to review the archives of team communication and work products. Unfortunately, the rich communicative environment did not provide the external managers with all of the cues necessary to accurately interpret the work of the team and its members. In this specific case, the team proposed and the external managers agreed to no longer monitor in this manner. This example suggests the need for further clarification on the role of external monitoring and control.

In addition, some of the literature suggests or implies that control within the team is relevant and should be researched. Knoll and Jarvenpaa (1998) described teams that developed task approaches, milestones, document structures, and norms to support collaboration. Members also directed pressure at out-group members who violated participation norms. Weisband (2001) described group processes and mechanisms to create awareness of other members' behavior; her paper also examines the impact of "leadership behaviors" of "pressuring" and "assessing member behavior" and when those occur in the project. These behaviors could be construed as internal control and monitoring behaviors. Beyond these statements, several researchers recommend further research specifically on norm formation in virtual teams (e.g., Furst et al., 1999; Jarvenpaa et al., 1998). Furthermore, Olson and Olson (2000) note, "Remote work is reorganized to fit the location and technology constraints." These adaptive processes might also have implications for the enactment of control. These

observations suggest that control and monitoring among team members is a viable area for further research.

The next section presents the foundations for theory-building research on control.

2.2. FOUNDATIONS FOR THEORY-BUILDING RESEARCH ON CONTROL

This section introduces the conceptual foundations that inform my theorizing about control; the concepts and theories I identify are drawn from theories about control in organizations, small groups, and information technology. The sections below offer a conceptualization of control (2.2.1), identify key concepts and theories (2.2.2), highlight issues related to theoretical structure (2.2.3), and summarize assertions about control in global virtual teams (2.2.4).

2.2.1. Conceptualization of Control

To build theory about control enactment in global virtual teams, it is important to begin with a clear conceptualization of control. That is, what is control? How is control different from related concepts, such as coordination and monitoring? What is the purpose or intended consequences of control? This section defines control, contrasts this dissertation's definition of control with other definitions and related concepts, and mentions consequences of control.

Defining Control

The concept of control has several meanings that need to be distinguished. In everyday usage, control can be used as both a verb (i.e., to regulate) and a noun (i.e., a device or mechanism used to regulate); control can also refer to an

outcome (i.e., being restrained or regulated) or state of being (e.g., “everything is under control”) (Oxford English Dictionary, 1989). Scholarly research on control also displays a variety of meanings. “A consequence of all these diverse formulations is that control is referred to simultaneously as an organizational setup, a process of regulating behaviors, and an organizational outcome” (Das and Teng, 1998: 493). This section offers definitions of several control-related concepts utilized in this dissertation.

Control is defined here as *attempts to influence members of a collective to engage in behaviors that lead to the attainment of collective goals* (Flamholtz et al., 1985). Consistent with recent research on control (e.g., Henderson and Lee, 1992; Jaworski, 1988; Kirsch, 1996 and 1997; Merchant, 1988), this definition conceptualizes control in a broad, behavioral sense that includes all organizational actions that help ensure organizational members pursue organizational goals (Merchant, 1988).² The definition also recognizes that control is oriented to goals of a collective (e.g., group or organization), while allowing for diversity in how these goals are established (e.g., through external authority, dominant coalition, etc.) (Flamholtz et al., 1985). For greater precision, I distinguish control enactment (i.e., control as a verb) from control mechanisms (i.e., control as a noun), as considered next.

Control mechanisms are devices or organizational arrangements designed to influence the behavior of organizational members toward organizational goals

² As Merchant noted, Flamholtz et al. (1985) actually used a more narrow cybernetic conceptualization of control in the paper that emphasizes measurement and feedback. I note that their formal definition of control allows for the broader perspective, even though their actual model did not take advantage of that understanding.

(Das and Teng, 1998; Kirsch, 1997). As discussed in subsequent sections, these mechanisms can include both processes (e.g., monitoring, socialization) and structures (e.g., rules, norms), which are often used in combination (Flamholtz et al., 1985). Furthermore, while the definition above emphasizes that mechanisms are purposeful in their design, it is also helpful to recognize that organizational actions may have unintended effects, some of which may impact control. Therefore, *control mechanisms* are defined in this dissertation as *structures and processes with the purpose or effect of influencing behavior toward collective goals*. As implied above, the term *control enactment* in this dissertation *refers to the development and operation of these control mechanisms over time*.

Finally, the initial discussion suggests that control can refer to an achieved outcome or effect. While not the primary emphasis of this research, the dissertation uses the term *level of control* when appropriate to refer to *the degree to which desired behavior is ensured* (Das and Teng, 1998). The last part of section 2.2.1 further expands on control as a consequence of control mechanisms; the next section contrasts my definition of control with other conceptualizations.

Contrasting Definitions of Control

For clarity, it may be helpful to distinguish the definition of control used in this dissertation from other conceptualizations of control found in the literature. First, this dissertation does not take a psychological perspective, which emphasizes the experience of control. One psychological definition says, “Control comes from the knowledge that someone who matters to us is paying close attention to what we are doing and will tell us if our behavior is appropriate

or inappropriate” (O’Reilly and Chatman, 1996: 161). This dissertation does not focus on how people experience control (see section 7.1 of the conclusion for consideration of this future research opportunity).

Similarly, another conceptualization of control excluded from this dissertation is personal control. “Personal control is a psychological construct reflecting an individual’s beliefs, at a given point in time, in his or her ability to effect a change, in a desired direction, on the environment” (Greenberger and Strasser, 1986: 165). Theories of personal control hold that most people, regardless of their locus of control, want more control over their environments; low or less than desired levels of personal control impact factors such as individual performance and satisfaction (Greenberger et al., 1989). While these theories are instructive about individual motives for enacting or reacting to control (of the kind defined in this dissertation), they do not address the attempts to influence behavior that are core to my definition of control. Indeed, “[p]ersonal control, [which is] a subjective perception, may or may not involve actual attempts to influence” (Greenberger et al., 1989: 31). As such, personal control is not equated with control for the purposes of this research.

The next section distinguishes control from related concepts in the literature.

Contrasting Control from Related Concepts

This section contrasts control, as defined in this dissertation, with related concepts of coordination and monitoring.

Coordination – Scholars have long recognized that a central problem of organization is how to get individuals with potentially differing values and objectives to act jointly to benefit the organization. For example,

From the perspective of Mayo (1945) and Barnard (1968), the fundamental problem of cooperation stems from the fact that individuals have only partially overlapping goals. Left to their own devices, they pursue *incongruent objectives* and their *efforts are uncoordinated*. Any collectivity which has an economic goal must then find a means to control diverse individuals efficiently. (Ouchi, 1980: 130, emphasis added)

This quotation implies that the pursuit of goal congruence and coordinated behavior are fundamental to collective action. There is little debate that the pursuit of goal congruence is central to theories of control (Eisenhardt, 1985) (see section 2.2.2.2 for further discussion of how various control mechanisms achieve goal congruence). The centrality of coordination to control is less clear in the literature.

Coordination refers to “the linking together [of] different parts of an organization to accomplish a collective set of tasks” (Van de Ven, Delbecq, and Koenig, 1976: 322, cited in Nidumolu, 1995). Some research suggests that the process of directing work tasks and other means of coordination are important components of a system of organizational control (e.g., Edwards, 1981; Yates, 1989). Other research takes the view that coordination mechanisms such as organizational structure are relevant to the operation of control, but are not control per se (e.g., Ouchi, 1977). Although the broad, behavioral view of control adopted in this dissertation (i.e., attempts to influence members of a collective to engage in behaviors that lead to the attainment of collective goals) might include some coordination mechanisms, I proceed from the perspective that the two

concepts are highly related but not identical. As such, my focus is on control, but I will consider the relationship between coordination and control.

Monitoring – Monitoring refers to “tracking, interpreting, and transmitting status information” about an object, such as a team or team member (Marks et al., 2001). Kirsch (1996) suggests that the act of monitoring, (“which serves as an information system and makes behaviors more observable”), is distinct from the exercise of control. However, it is important to recognize that the act of observation or measurement alone may alter behavior and, therefore, may contribute to control. For example, the Hawthorne studies illustrate the great impact that observation can have on performance; the presence of an external observer had a greater impact on performance than some working conditions. Furthermore, recent experimental findings suggest that monitoring, in and of itself, has an effect on behavior beyond its link to subsequent controlling action such as feedback (Larson and Callahan, 1990). While a conceptual distinction between monitoring and control is continued in this dissertation, I consider how monitoring serves as both an information system that influences control as well as being a possible means of exerting control.

This section on the conceptualization of control ends by considering the consequences of control.

Consequences of Control

By definition, control attempts to effect the regulation of behavior (Kirsch, 1997). That is, properly implemented control mechanisms promote more predictable behavior toward desired objectives (Leifer and Mills, 1996). This

view suggests that control, matched appropriately with the task or situation, increases the probability of desired organizational performance (Das and Teng, 1998; Jaworski, 1988).

Although this provides some of the logic for the current interest in control, it is important to note that there are many detractors from this view. Some present arguments that control, in the presence of environmental factors that constrain prediction of the future, reduces flexibility and potentially focuses attention on the wrong issues or decreases adaptability (Wheatley, 1992; Goold and Quinn, 1990). Others recognize that control is never complete or easily accomplished, since workers resist efforts to be controlled (Prasad and Prasad, 2000) and may engage in dysfunctional behaviors (Jaworski, 1988). Finally, some people see control as manipulation that exerts high personal costs on those under control, such as the denial of individual autonomy, moral agency, and the possibility of moral community (Maguire, 1999).

I proceed with the goal of understanding control in a virtual context, leaving room for future research on the implications of control on those involved. The next section explains key concepts and theories for theorizing about control.

2.2.2. Key Concepts and Theories

To build theory about control enactment in global virtual teams, it is important to identify the key concepts and theories that help us understand control. That is, what kinds of concepts and theories provide insights about how control is enacted? Here, I introduce literature on: (1) cybernetic conceptions of

control theory, (2) the selection of control modes, (3) control enactment in small groups, and (4) control and information technology.

2.2.2.1. Cybernetic Control Theory

One of the most influential theories about control involves cybernetics. A cybernetic process consists of goal and standard setting, measurement and comparison, and evaluation and feedback for corrective actions (Weiner, 1954; Flamholtz et al., 1985; Snell, 1992). Such a process, whether for a machine or an organization, is goal-directed, focusing on reducing discrepancies until the desired objectives are achieved. Because it flows from general systems theory, cybernetic theory may be generalizable across contexts and levels of analysis (Green and Welsh, 1988). The cybernetic process of control has been applied to self-regulating entities (Tsui and Ashford, 1994) as well as in open systems (Flamholtz et al., 1985).

However, some research has begun to question the applicability of cybernetic conceptualizations of control. Some scholars note that the assumptions or boundary conditions of cybernetics – repetitive task or activity, presence of clear standards, measurability of accomplishment, usability of feedback – are often violated or ignored in control research (Green and Welsh, 1988; Hofstede, 1978). Other researchers associate cybernetics with a narrow focus on controlling activities and suggest that control should also encompass mechanisms that influence people more directly (Jaworski, 1988; Kirsch, 1997; Merchant, 1988). As such, they jettison a cybernetic view for a “broad, behavioral perspective on control” (Merchant, 1988: 41), which they do not define in much detail.

2.2.2.2. *Control Mechanisms and Modes*

This section introduces different types of control mechanisms, antecedents that impact the selection of these mechanisms, and how controllers construct a portfolio of control mechanisms.

Control Modes and Mechanisms

Scholars often categorize control by features of the mechanisms used to create it (see overviews by Snell, 1992, and Leifer and Mills, 1996). It is common to dichotomize mechanisms by their formality, although researchers take different views on whether or not these are discrete groupings (Jaworski, Stathakopoulos, and Krishnan, 1993) or just points along a continuum (Merchant, 1988). Formal control is more explicit in nature, exemplified by rules or performance incentives that focus on behavior, output or both. Formal control stresses *compliance* with specified behaviors or outcomes. Informal control is typically driven by values or norms enacted in individuals (self control, self management, or self regulation) or groups (social, normative, or clan control). Informal control, whether enforced by an individual or a collective, emphasizes *commitment* to shared values or norms. These groupings of control mechanisms are often referred to as modes of control (i.e., formal behavior control, formal outcome control, informal clan control, informal self control), and variants of this approach have dominated literature on organizational control over the last few decades (e.g., Cardinal, 2001; Eisenhardt, 1985; Jaworski, 1988; Kirsch, 1996; Ouchi, 1977; Snell, 1992).

Antecedents of Control Modes

Scholars have proposed that several factors influence the selection of control mechanisms (see Thompson, 1967; Ouchi, 1979; Eisenhardt, 1985; Kirsch, 1997); these include features of the task (outcome measurability; behavior observability; task programmability), controller (knowledge of the transformation process; role expectations), controllee skills, and the availability of pre-existing mechanisms. The combination of these factors in a given situation is suggested to have descriptive and normative relevance to the use of control mechanisms (Govindarajan and Fisher, 1990; Kirsch, 1996 and 1997). In general, observable behavior combined with transformation knowledge promotes behavior control; outcome measurability promotes outcome control when the previous factors are lacking; and informal control such as clan or self-control is necessitated in the absence of all of these factors.

Constructing a Portfolio of Control Modes

Kirsch (1997) found that these task characteristics, role expectations, and knowledge and skills helped controller's select *appropriate* pre-existing mechanisms of formal control. That is, the availability of a pre-existing mechanism was not sufficient; the controller also had to judge the mechanism to be appropriate for the situation at hand before it would be utilized. If the controllers perceived existing mechanisms were lacking, then they would define new mechanisms of formal control or add new mechanisms of informal control. These choices were also based on task characteristics, role expectations, and knowledge and skills. Kirsch recommended more research on control enactment:

“... there is little substantive knowledge about how and why control modes change over time” (1997: 237).

2.2.2.3. Control Enactment in Small Groups

Control in a group originates from sources that are external (managers) and internal (members) to the group, often in combination (Henderson and Lee, 1992). Since the primary focus of this dissertation is on control among team members, this section emphasizes how members enact control. The first section considers norm formation in groups. The second section on concertive control also considers how groups enact control, but it more explicitly recognizes a role for external sources in shaping control among members. (See section 2.1.2.2 to review additional group development theories that refer to control.)

Formation of Norms

Groups develop and alter norms through: carry-over behaviors from past situations, primacy (i.e., the first behavior pattern that emerges), critical events in the group’s history, and explicit statements by supervisors or coworkers (Feldman, 1984; Spich and Keleman, 1985). Similarly, a group can form “habitual routines” by importing patterns, creating patterns early in group life, or gradually evolving these patterns over time (Hackman and Gersick, 1990). Due to forces such as social impact, social entrainment, cost of change, and social norms, “...habitual behavior, once established, persists more or less automatically until and unless something specific happens to break a group out of its routine” (80). Hackman and Gersick suggest that an “explicit impetus for change” offers the possibility that a group will modify, abandon, or replace a habitual routine;

occasions include encountering novelty, experiencing failure, reaching a milestone, receiving an intervention, and coping with structural change within the group.

From their examination of groups of MBA students in a laboratory setting, Bettenhausen and Murnighan (1985) developed a theory and propositions about the emergence of norms (defined as “regular behavior patterns”) in competitive decision-making groups. Some of the key features are outlined below to give an indication of one developmental process for norms described in the literature.

First, when facing a novel task or situation, most participants are uncertain about what to do. Individuals often compare the situation to something they have experienced before, attempting to identify and use “scripts” (Abelson, 1976) to guide their behavior. However, these scripts rarely match the situation exactly and may not match the scripts chosen by other group members. As such, members turn to each other for clues about appropriate behavior (Festinger, 1954). Bettenhausen and Murnighan (1985: 353) explained:

As they observe each other, the members of these groups become actors for each other: as one person tries unobtrusively to observe the others, they observe him or her with similarly manufactured detachment. Observing actions begins to establish a role or basis for each actor-observer's future actions.

The first actions may play a particularly important role in what scripts are chosen by the group.

Second, initial encounters can result in similarities and differences between group members with regard to perceptions of the situation and the selection of scripts. In one scenario, a group with similar perceptions and scripts

can begin acting immediately with few difficulties. In another scenario, members with similar perceptions and different scripts may proceed smoothly initially, only to discover underlying conflicts at a later point in time. In the most troublesome scenario, differences in perception and scripts make it difficult to identify a starting point to resolve differences and develop agreement about how to proceed.

Finally, as group members interact, shared experiences shape expectations about future interactions. These experiences may confirm individual interpretations of the situation or lead to the resolution of discrepancies through changed interpretations or attempts to persuade others. In the latter case, challenges or “threats” to a precedent provide an opportunity to evaluate the appropriateness of a group’s actions. As such,

Although norms can develop without threats – each successive agreement contributes to the members’ shared understanding of appropriate behavior – threats are crucial to understanding the formation of a norm, because they allow the evolving, taken-for-granted activity of the group interaction to be publicly and self-consciously considered (357).

How a group resolves these threats provides some indication of the subjective meanings members attached to their previous interactions. Once a norm has formed, sanctions are a likely response to violations and challenges.

Another developmental process called concertive control is considered next.

Concertive Control

Drawing from prior organizational research on control (e.g., Tompkins and Cheney, 1985), Barker (1993) described the development of concertive control in face-to-face, self-managing work groups. As the ISE organization

switched from a “traditional” manufacturing approach to self-managing teams, workers began to develop consensus around the values espoused by company leaders. Over time, this consensus among group members led to norms and then more formalized rules that were enforced by members, suggesting a progression from values to norms to rules. Ultimately, the team became a more pervasive supervisor than the previous external managers were; this more effective control “...comes from the authority and power teammates exercise on each other as peer managers” (Barker, 1993: 433).

2.2.2.4. Control and Information Technology

The discussion of the selection of control mechanisms (section 2.2.2.2) recognized the role of information systems, broadly defined, in control. This section more explicitly links the use of information technology to the enactment of control. Communication and measurement enabled by information technology may diminish (e.g., use of lean media) or enhance (e.g., surveillance tools) opportunities for control.

Literature on monitoring or surveillance is replete with technological means (e.g., counting keystrokes) for observing employee behaviors and outputs. Attention usually gravitates to privacy issues and ethics of employers monitoring workers’ electronic communication and private lives, such as managers examining employee files on company computers or reading e-mail messages sent to or from employees. At the same time, some have compared the impact of monitoring through physical observation with electronic monitoring (e.g., Griffith, 1993). Varying impacts have been noted on task productivity and the

individual worker (e.g., stress), suggesting that how electronic monitoring is implemented matters (Alder and Tompkins, 1997). This literature provides many examples of investments in information systems that make behavior more observable. It is also possible for these means of surveillance to work in combination with control among peers, such as peer pressure (Sewell, 1998).

The next section examines the theoretical structure of these literatures.

2.2.3. Theoretical Structure

Since this dissertation is oriented toward theory-building, I also paid attention to the theoretical structure of this research about control. Following Markus and Robey (1998), I considered level of analysis, causal agency (i.e., nature of causality) and logical structure (i.e., temporal aspects of the theory).

Level of Analysis

Control has been conceptualized and examined at several levels of analysis. Some objects of control are more macro in nature (e.g., control of an organization) while others are at a micro level (e.g., control of an individual or group) (Flamholtz et al., 1985). As such, one significant consideration in building upon these diverse perspectives is how to relate their constructs and theories across levels of analysis (cf., discussion of macro, micro, and meso theories in House, Rousseau, and Thomas-Hunt, 1995). Most of the research on control modes originated from organizational level analyses (e.g., Ouchi, 1979; Eisenhardt, 1985) before Kirsch applied them to project teams (e.g., Kirsch, 1996). The research on groups and information technology are at more micro levels. Cybernetics is unusual in that it is applicable across levels of analysis

(Green and Welsh, 1988). With some care, each of these streams of literature may be relevant to group-level analyses required to understand control enactment in global virtual teams.

Causal Agency

This literature displays some variety with respect to causal agency. First, several of the theories noted here are deterministic and normative. Cybernetic control, under the appropriate conditions, leads to desired performance. Task, contextual, and controller characteristics dictate what control modes can and should be implemented for a given situation (Kirsch, 1996). Second, some theories recognize that the way control is implemented may make a difference for the outcomes achieved. For example, the way electronic monitoring is implemented alters the effects it has on worker productivity and stress (Alder and Tompkins, 1997). Finally, a few of the theories adopt more emergent views. For example, Bettenhausen and Murnighan (1985) suggest that norms emerge from a combination of members' underlying scripts and how those are chosen and revealed through initial and continuing interactions.

Logical Structure

These theories are also diverse with respect to temporal issues. Cybernetics is a process theory that is appropriate for repetitive tasks or activities. While control may occur under conditions that are appropriate to cybernetic theory, it is also relevant in non-repetitive tasks such as information systems development where progress may be evaluated along the way (Kirsch, 1996 and 1997). The literature on control modes was completely oriented toward variance

theories until Kirsch (1997) proposed her theory about the construction of portfolios of control. The research I noted on information technology is largely of the variance nature, but literature on control in groups is much more oriented toward process theory.

Since this dissertation examines control in global virtual teams, the next section considers assertions from the control literature that are relevant to global virtual teams.

2.2.4. Assertions about Control in Global Virtual Teams

The intent of this section is to highlight conceptual issues from the review of the control literature that are significant to the global virtual team context. These include: behavior observability, lateral relationships, and non-routine and uncertain tasks.

Behavior Observability

Behavior observability, one of the antecedents of control modes noted above (see section 2.2.2.2), is particularly interesting in the global virtual team context. For example, on an information system development team studied by Kirsch,

The IS manager commented that his ability to observe behaviors was hampered by the global nature of the project: “Nobody knew what was going on in the other location. People kind of suspected operations were pretty much the same, so we had the assumption, well, if we do something here, probably it’s going to be pretty much the same in the other place. But that turned out not to be the case.” (1997: 226)

In the extreme, global virtual teams rely primarily on lean electronic media (e.g., e-mail) to transfer information. Even if sight is permitted (e.g., videoconferences,

travel), the context is unlikely to permit the regular physical observation of people while they perform work.

However, although early measures of behavior control asked “how often do you *see* [your employee]” (Ouchi and Maguire, 1975: emphasis added), direct physical observation is only one type of “information system” that can be used to observe behavior (Kirsch, 1996). Eisenhardt (1985) introduced the concept of behavior observability in the management literature, explaining its role in agency theory. When an agent’s behavior is completely observed (i.e., the principal has complete information), then behavior control will be used. When observation is imperfect (i.e., information is incomplete), the principal can (a) purchase information and reward the agent’s behavior or (b) simply reward outputs. Thus, behavior observability refers to the difficulty or cost of obtaining information about the behavior of the agent or controllee. Kirsch (1996: 3) described behavior observability as “the extent to which the controller has access to information systems that reveal the controllee's actions. These information systems, among other mechanisms, include boards of directors, accounting systems, personal observation, and evaluative meetings.”

As such, the notion of observing behavior is altered in this view; it is expanded to include communication about work, work artifacts or by-products, and interim outputs or measures. These types of observation enable, on occasion, what previously might have been called output control (e.g., review of “output records” in Ouchi and Maguire, 1975) to be used for purposes of direct behavioral control (e.g., analyzing computer code electronically to see if design procedures

were followed). Of course, all control is ultimately behavioral in its effect (Ouchi, 1978). Taken together, these thoughts about behavior observability in global virtual teams suggest that it may be possible for “information systems” to help team members or external managers gather information about the behavior of distant others.

Lateral Relationships

Global virtual teams are said to involve more lateral relationships within and across organizations (Faucheux, 1997; Lipnack and Stamps, 1997). Although much of the control literature emphasizes formal control within a hierarchical setting (Sheppard and Tuchinsky, 1996), many of the concepts and theories noted above have been applied in lateral relationships. This section considers what control mechanisms might be applicable to lateral relationships in global virtual teams.

Informal means of control have been heavily applied to lateral relationships. Research on face-to-face teams (see sections 2.1.2.2 and 2.2.2.3) has considered control in group processes, particularly emphasizing the formation of common values and norms and their subsequent enforcement by the group (e.g., Barker, 1993; Hackman, 1976). Research on peers within a professional partnership suggests that relationships are used by the collective to exert pressure on aberrant members when necessary; “sanctioners” are chosen because of their personal ties to the offender and by their proximity (i.e., same office) (Lazega, 2000). These informal means of control may be applicable to global virtual teams. For example, it may be more common for a team member at the same

physical location to take the responsibility for pressuring a teammate that is not following the norms.

While more rare, some research has also applied formal control to lateral relationships. Das and Teng (1998) proposed that a combination of formal (e.g., goals, rules, and regulations) and informal (e.g., socializing managers) control mechanisms were needed in partner alliances. Kirsch (1997) found that users exercise control during the development of information systems using a mix of formal and informal control modes. As such, formal control mechanisms may also be relevant. Together, control literature suggests the need to look broadly at the ways control could be enacted in global virtual teams.

Non-Routine, Uncertain Tasks

As an organizational response to environmental changes, global virtual teams often face non-routine tasks with high levels of uncertainty (see section 1.1); a major portion of the literature on control proposes a limited or even destructive role for control in such a context. Because of the boundary conditions of cybernetics, some suggest that control is only applicable to routine tasks that are so well understood that appropriate responses to feedback are evident (Green and Welsh, 1988). For example, Sitkin, Sutcliffe, and Schroeder (1994) referred to the limitations of cybernetics to propose that control is applicable to routine tasks with low uncertainty; they suggested that learning is preferable for high uncertainty tasks. Furthermore, formal control may be ineffective for non-routine, uncertain tasks. In such a situation, it is difficult to prespecify appropriate behaviors, and the presence of control mechanisms may draw

attention away from environmental changes and reduce responsiveness and adaptability (Goold and Quinn, 1990; Wheatley, 1992).

Nevertheless, some research still suggest that control is relevant in non-routine, uncertain tasks. Despite common occurrences of conflicting and changing goals and the inability to prespecify task requirements, Kirsch (1996) argued that both formal and informal modes of control are relevant in system development projects. Ouchi (1979) made the case that informal control was appropriate for uncertain and ambiguous situations, “It may be that, under such conditions, the clan form of control, which operates by stressing values and objectives as much as behavior, is preferable” (845). As such, the control literature raises questions about what types of control mechanisms are appropriate for global virtual teams.

The next section integrates the foundations on global virtual teams and control.

2.3. INTEGRATION OF RESEARCH ON CONTROL AND GVTs

This section summarizes key opportunities for theory-building research on control in global virtual teams and presents the preliminary conceptual model that guided the research.

2.3.1. Opportunities for Theory-Building on Control in GVTs

My review of literature on both virtual teams and control suggests that global virtual teams provide an interesting context in which to examine control. Key features of this context include emphasis on lateral relationships; non-

routine, uncertain tasks; and presumably lower levels of behavior observability. Drawing on the virtual team and control foundations just introduced, this section identifies opportunities for theory-building by attempting to understand how control is enacted in global virtual teams. The first section explores research opportunities about control enactment more generally; the second section highlights the concepts of monitoring and behavior observability.

Control Enactment in Global Virtual Teams

Key opportunities for theory-building research on control in global virtual teams involve the characteristics of the control mechanisms used and how the control mechanisms are enacted. Control mechanisms, as defined in section 2.2.1, are structures and processes with the purpose or effect of influencing behavior toward collective goals. Control enactment, as defined in section 2.2.1, refers to the development and operation of control mechanisms over time. Important questions raised by this review include: What types of control mechanisms are used in global virtual teams. How do these control mechanisms form and change over time?

Drawing from the foundations of global virtual teams as well as control, three features of control mechanisms appear particularly relevant for theory-building purposes. First, control mechanisms, as stated in the definition, can be processes (e.g., monitoring, pressuring) or structures (e.g., norms, deadlines). Both types of mechanisms can be seen in group and organization control literature, and this distinction suggests that the interplay between the two may be important (see similar concerns about technology appropriation in section

2.1.2.3). Second, control mechanisms may originate from different sources. Group literature recognizes sources of control internal and external to the team; organizational literature considers hierarchical and non-hierarchical (i.e., lateral) sources. Both recognize the possibility that peers enact control mechanisms. Third, a variety of types of control mechanisms may be possible in global virtual teams. I have followed the convention to this point of distinguishing informal and formal control (Jaworski et al., 1993); however, other dimensions may be more important than the extent to which control mechanisms are explicit or formulated in writing (Merchant, 1988). For example, it may be necessary to consider how control mechanisms reinforce commitment to values and norms or achieve compliance with specified behaviors.

Beyond the characteristics of the control mechanisms, three aspects of how these mechanisms are enacted seem relevant. First, how do control mechanisms form? Literature on norm formation (Bettenhausen and Murnighan, 1985) and concertive control (Barker, 1993) shows these developmental processes in face-to-face groups, but this has not been examined in virtual teams. Second, when performing a non-routine task, do global virtual teams develop routine or recurring processes to maintain control? Cybernetics offers an iterative process for maintaining control in routine tasks; however, the literature currently does not explain a normal or recurring process of control when performing a non-routine task. Finally, how and why do global virtual teams adapt control mechanisms over time? Criticisms (e.g., Goold and Quinn, 1990; Wheatley, 1992; Sitkin et al., 1994) of formal control mechanisms, in particular, imply that the way global

virtual teams adapt control mechanisms may be critical to their ability to respond to changes and achieve high performance.

Monitoring Members and Behavior Observability

Existing research on global virtual teams emphasizes the loss of the ability to observe behaviors used to establish informal rules or norms or to monitor more generally (e.g., Furst et al., 1999). The control literature suggests that this view discounts the availability or usefulness of information systems other than direct physical observation (Kirsch, 1996). These ideas imply several research questions about global virtual team members who cannot see each other performing their work. How do global virtual teams monitor member behavior? What, if any, “information systems” provide information about the behavior of distant team members? How are these “information systems” constructed or appropriated? Are members able to interpret the information they receive from these “information systems”?

Indeed, it may be more difficult to obtain and interpret information about member behavior in a global virtual team. It may be helpful to develop or adopt information systems with awareness mechanisms that share information about other members’ behaviors (Dourish and Bellotti, 1992); however, the quickly changing nature of the teams could make some of these investments inadvisable or quickly obsolete. Furthermore, a lack of mutual knowledge may contribute to attribution errors about behavior when the person monitoring is interpreting available information (Cramton, 2001). These attribution errors create the potential for conflict and diminished participation if monitoring leads to

inappropriate control behaviors. Nevertheless, monitoring may provide additional information to the observer that permits adjustment or corrective action to achieve better outcomes. Also, the person being monitored may act more in the interests of the group in the presence of monitoring that creates some accountability to the group. Thus, the inability to physically observe behavior may alter monitoring and control behaviors, but this assumption requires further research.

The next section introduces the preliminary conceptual model used to guide this research.

2.3.2. Preliminary Conceptual Model

The purpose of this section is to introduce the preliminary conceptual model that assists this dissertation's examination of control enactment in global virtual teams. Following a brief overview of the purpose and features of the model, the remainder of the chapter defines and describes model concepts: internal team processes and structures, external processes and structures, and potential outcomes.

2.3.2.1. Model Purpose and Features

The purpose of the preliminary conceptual model is to summarize concepts (i.e., processes and structures) and potential relationships among these concepts that *may* contribute to control enactment in global virtual teams. The model integrates literature on virtual teams and control just presented. Because internal and external sources of control may be relevant, the model differentiates between processes and structures initiated internally by team members and those from external sources.

The preliminary conceptual model has several features that are noteworthy. First, the model allows for all possible relationships among structures, processes, and outcomes, rather than offering any specific predictions. This is particularly important for the theory-building, rather than theory-testing, objectives of this research. Second, although the preliminary conceptual model has no explicit temporal dimension, the research question (i.e., how is control enacted in global virtual teams?) draws attention to structures and processes as they develop and change over time. Finally, the model only depicts high-level concepts; the textual description below also elaborates on subconcepts that were important to the analysis. For example, the internal team process of monitoring included both team monitoring and member monitoring. The preliminary conceptual model shown graphically in Figure 2.1 is further described in the remainder of this section.

2.3.2.2. Internal Team Processes and Structures

Several processes and structures initiated internally are identified in the model, including: team processes for control, team processes for monitoring, contributing team processes (e.g., technology appropriation, coordination, and production), and team-initiated structures. Each is described briefly below.

Team Processes for Control

Control, as defined previously, refers to attempts to influence members of a collective to engage in behaviors that lead to the attainment of collective goals. In this section, the emphasis is on the control-related behaviors of members and the group. Control is a feature of the group, not an individual. However, this

does not mean that team members perceive the same level of control in a team or have the same influence on the enactment of control. There is potential for individual members, supervisors, and others to enact control of all types in the virtual context. This view recognizes that these sources of control are not mutually exclusive (Manz and Sims, 1980; Henderson and Lee, 1992). Even under intense external control, subordinates usually exercise some degree of self control (Manz and Sims, 1980). Building on the review of control in section 2.2, two types of internal control processes are emphasized:

Structuring – The literature review noted a variety of control mechanisms that are used in groups and organizations; a theory-building study of control enactment would be incomplete without considering how these structures form and change over time. Borrowing from the IT literature (see section 2.1.2.3), I use the term *structuring* to refer to *any explicit or implicit means of developing structures for control*. This overarching category would include the development of formal rules and procedures as well as more informal values and norms that influence behavior (e.g., Barker, 1993; Feldman, 1984; Riddle, Anderson, and Martin, 2000; Schein, 1988). Rather than identify these potentially overlapping processes separately, the more general term of structuring is used.

Pressuring – The literature review identified attempts to motivate or exert pressure to encourage a team member to engage in (or refrain from engaging in) specific behaviors. This “discretionary stimuli” serves a role in shaping member behavior (Hackman, 1976; Barker, 1993).

Team Processes for Monitoring

Monitoring involves tracking, interpreting, and transmitting status information (see Marks et al., 2001). This includes the “gathering of information about the work effectiveness and productivity of individuals, groups, and larger organizational units. This might be done by observing employees’ work behavior, inspecting their work output, asking them to report verbally about their work progress (e.g., during weekly staff meetings), or by reading documents that summarize key performance indicators” (Larson and Callahan, 1990: 530). Kirsch (1996) suggests that the act of monitoring, (“which serves as an information system and makes behaviors more observable”), is distinct from the exercise of control. While this conceptual separation of monitoring and control is continued here, it is important to recognize that the act of observation or measurement alone may alter behavior and, therefore, may contribute to control more directly.

Here, monitoring emphasizes two general areas:

- *Team Monitoring* is tracking, interpreting, and transmitting status information about the group (Marks et al., 2001), which would include task progress, group processes, and applicable structures.
- *Member Monitoring* is tracking, interpreting, and transmitting status information about one or more specific members. Member monitoring may focus on *member behaviors*, which may or may not be physically visible to other members, or *member output*, such as electronic communication or work products.

Contributing Internal Team Processes

Three internal team processes are also considered for their potential to impact control and monitoring: technology appropriation, coordination, and production.

Technology Appropriation – Technology appropriation is formally defined as “immediate, visible actions that evidence deeper structuration processes” (DeSanctis and Poole, 1994:128). Here, I primarily emphasize the instrumental uses to which available technologies are applied. Not all virtual teams use the same technologies in the same manner. The selection of particular media and how the underlying structures are appropriated may have implications for control.

Coordination – Coordination is “the process by which team resources, activities, and responses are organized to ensure that tasks are integrated, synchronized, and completed within established temporal constraints” (Cannon-Bowers et al., 1995 quoted in Waller, 1999: 129). Some aspects of task coordination are similar to several of the “directional factors in group work” proposed by Stymne (1982, cited in Stymne, 1991). These include: clarifying task demands, distribution of work, use of resources, and coordination of actions/contributions. Coordination can produce, and be facilitated by, horizontal and vertical differentiation among group members.

Production – Production refers to attempts to accomplish team (task) objectives. Production is one common, and arguably the most significant, measure of group effectiveness (Hackman and Walton, 1986). While it may be an outcome of control, the quality and characteristics of production may also impact

control. That is, the way a group completes individual *subtasks* and *integrates* individual contributions may shape the forms of control that are needed or are viable.

Team-Initiated Structures

Several structures may be explicitly or implicitly initiated by team members. Social norms are “customs, traditions, standards, rules, values, fashions, and all other criteria of conduct which are standardized as a consequence of the contact of individuals” (Sherif, 1936: 3, cited in Bettenhausen and Murnighan, 1985). *Norms* capture expected behaviors for a given situation (Hackman, 1976). Similarly, a *routine* “...exists when a group repeatedly exhibits a functionally similar pattern of behaviors in a given stimulus situation...” (Gersick and Hackman, 1990: 69).³ A *role* refers to a configuration of activities or behaviors that an actor is expected to do (Galletta and Heckman, 1990); for instance, a team may nominate a team captain who coordinates group actions. *Subtasks* are specific units of work or behavior that specific members are expected to accomplish. *Deadlines* are time targets for a member or the team as a whole to complete specific behaviors or outputs.

2.3.2.3. External Processes and Structures

External processes refer to the way a group interacts with those outside the group, such as external managers; I recognize two key processes. First, teams communicate externally to clarify the task, which might include a member

³ Routines can be implicit or explicit. This view adapts Gersick and Hackman’s definition of habitual routines to so that it does not exclude awareness of the routine.

seeking or an external leader providing task or process guidance. I refer to this process as *external specifying*. *External monitoring* is like internal team monitoring in that it includes tracking, interpreting, and transmitting status information. External monitoring might include an external party gathering information about the group or a member reporting team status information to an external manager.

Following work on technology use in departments (e.g., Barley, 1986; Orlikowski, 1993) and groups (e.g., DeSanctis and Poole, 1994), the model notes that global virtual teams encounter a variety of structures (beyond those initiated by the team) that have the potential to shape behavior. *External structures* are often common to all team members and include characteristics of the organization and task environment, technology, and team (DeSanctis and Poole, 1994). However, it may also be necessary to consider local or member-specific structural characteristics to which distributed team members are differentially exposed. All of these structures might be salient to group members as they communicate and/or serve as external control structures. Specific examples of external control structures include externally-imposed deadlines and evaluation criteria.

2.3.2.4. *Potential Outcomes*

Although most of this chapter emphasizes structures and processes, the model recognizes potential outcomes. That is, structures and processes have implications for both the team and its members. Performance is a key outcome for the team, but more interim characterizations could be made about variable

states such as cohesiveness. For individual members, examples of outcomes include personal commitment and trust in the team.

2.4. CHAPTER SUMMARY

This chapter presented the conceptual background that guided this theory-building research on control enactment in global virtual teams. Individual sections on global virtual teams and control provided conceptualizations, identified key concepts and theories, summarized the theoretical structure, and reported assertions about control in global virtual teams. The section on global virtual teams emphasized the input-process-outcome framework, group development, and information technology effects and appropriation. The section on control drew upon cybernetic control theory; control modes such as formal behavior control or informal clan control; control in small groups; and control through information technology. Both sections summarized assertions about control in global virtual teams. The final section suggested opportunities for research and proposed a model to begin the research process. The next chapter describes the method used for a study to explore my research question: how is control enacted in global virtual teams?

Chapter 3: Method

This chapter describes the method used to collect and analyze data for this dissertation. Although this study is part of a larger program of research on global virtual teams (see section 1.3), the scope of this chapter is limited to features of the study that are relevant to the theory-building objectives of the dissertation. I conducted in-depth case studies of three global virtual teams in order to understand how control was enacted in these teams. Each team participated in an educational exercise where students, who were physically located on different continents, collaborated electronically over several weeks to complete a substantial project. I collected and analyzed data including text-based communication archives, project deliverables, and survey responses. After describing the research setting (3.1), this chapter explains the procedures used for data collection (3.2), selection of teams (3.3), and data analysis (3.4).

3.1. RESEARCH SETTING

The subjects and teams in this study participated in an educational exercise called the Global Virtual Team (GVT) Exercise. In the spring of 2000, subjects on four continents collaborated through electronic media to write a business plan over an eight-week period. This section introduces the educational exercise and then explains key features and procedures for subjects, team design, and tasks and instructions.

Educational Exercise

The GVT Exercise, conducted from 1993 to 2000, was an annual collaboration of faculty and students from universities around the world. It primarily offered students the experience of working with people from various cultures in a virtual context and secondarily served as a research laboratory for the study of virtual teams. Prior research studies considered issues of trust, communication, socialization, collocation, conflict, and diversity. Doctoral students from the University of Texas at Austin served as the Coordinator for each Exercise, with the original vision and continuing oversight provided by Professor Sirkka Jarvenpaa. Kathleen Knoll was instrumental in launching and coordinating the Exercise from its inception through 1996. I coordinated the final three sessions.

I chose to study the student teams in this exercise for several reasons. First, control enactment is a process that unfolds over time and is more relevant in task-oriented situations where there is some risk to the participants. As such, these conditions made it unlikely that a pure lab experiment would provide the needed context to address the research question. Second, given the assertion that control would be unlikely in global virtual teams, finding control in an extreme case where one would least expect it could provide stronger evidence for the relevance of control to the virtual context. Some features of this extreme case might include no group or member history, great demographic diversity, no physical collocation, and “lean” electronic communication media. The educational exercise setting gave the ability to instill these characteristics in the

cases while constraining variation on some factors (e.g., task, member diversity) that were not of primary interest to the study. Finally, beyond giving the sample size needed for separate quantitative studies, the setting enabled a level of access for data collection that is difficult to achieve in most field studies. In addition to collecting surveys at critical junctures in the project, the exercise format allowed me to capture the actual communication among team members.

Most writings on the case study research approach assume that the cases occur naturally, allowing the investigator to examine the case in its natural context (e.g., Yin, 1994; Benbasat, Goldstein, and Mead, 1987). Nevertheless, there is precedence in the literature for qualitative studies of virtual teams where students complete a group project over several weeks for course credit (e.g., Jarvenpaa and Leidner, 1999; Cramton, 2001). The conclusion chapter (see section 7.1) addresses the limitations of this educational exercise setting for the findings of the study; the next part introduces features related to subjects.

Subjects

Faculty teaching business courses at 12 universities on four continents (Australia, Europe, North America, and South America) asked their students to participate in the GVT Exercise in the spring of 2000. Most of the faculty had sponsored students in prior sessions of the GVT Exercise, but a few expressed interest after hearing about the Exercise through word-of-mouth. Faculty retained responsibility for evaluating the work of their own students. To encourage active participation, the Coordinator recommended that the Exercise account for at least

25% of each student's course grade at the student's sponsoring university; as such, almost all of the students had a grade-based incentive to participate.

Two-hundred-and-eighty (280) students participated in the Exercise. These subjects averaged 26 years of age with over three years of full-time work experience. They also varied in age (20 to 52), educational levels (undergraduate and masters), and work experience (0 to 28 years). See additional participant demographics in Table 3.1.

Team Design

The Coordinator randomly assigned subjects to 70 four-person teams. Based on a targeted team size of 4 to 6 members and faculty sponsor estimates of student participants just before the Exercise began, the Coordinator determined the number of teams by taking the number of enrolled subjects divided by the minimum targeted team size.⁴ To encourage heterogeneity in team membership and reliance on electronic communication, the team assignment procedure ensured that no students from the same university or country were assigned to the same team. As such, when combined with the subject characteristics noted above, members of these teams encountered considerable demographic, cultural, professional, temporal, and geographic diversity among team members.

⁴ Teams of four to six members were chosen because they are large enough to overcome some non-participation, but small enough to value the participation of each person. Four-member teams were employed (a) to provide a large sample of teams for the quantitative study and (b) because two universities that had been expected to contribute an additional student per team decided not to participate after the initial team assignments had been made. Subjects were originally told that additional members might be added to their team in the first week, but were informed later in the week that the team membership was final.

The Exercise offered several collaboration tools for each team. The Coordinator added members' preferred email addresses to an electronic mailing list (listserve) designed so that every email message sent to the team's listserve was distributed to all members of that team. Teams also had their own password-protected website that contained a calendar, bulletin board, chat room, file sharing tool, web page hosting, and task instructions. Academic Computing and Instructional Technology Services (ACITS) at the University of Texas at Austin hosted and maintained these tools; the software programs for the listserve and website were CREN's Listproc 8.0 and WebCT 1.3, respectively. Benefits of using these programs included: (a) minimal technical requirements for subject participation in the Exercise (i.e., email and web browser access); (b) permitted teams some choice among communication media; (c) archiving of actual team communication; and (d) minimal maintenance for the Coordinator. To discourage use of other communication channels, the Coordinator informed the students that other means of communication (e.g., direct email, Instant Messenger, etc.) would not be supported technically and that only communication through "official" technologies would be included in participation statistics provided to faculty for evaluation purposes.

Tasks and Instructions

This section briefly describes team tasks and Coordinator activities and instructions for the 2000 GVT Exercise, which ran from February 28 to April 19, 2000. The primary team task required each team to write a business plan for a new company they proposed; teams also accomplished a few smaller tasks in

preparation for the business plan. The Coordinator provided information to the subjects and their sponsoring faculty through a website (e.g., links to helpful resources on time zones and business plans) and periodic e-mail communication (e.g., announcements about upcoming tasks). Figure 3.1 presents the general time-frame for major team, Coordinator, and measurement events before, during, and after the project. See Appendix A for the task schedule and instructions provided to team members via their team website.

Beginning two weeks prior to the Exercise, the Coordinator notified potential subjects via email that their faculty sponsor had requested their participation in the GVT Exercise. This initial message invited subjects to a website where they could read an introduction to the Exercise and complete the entry form to enroll. The introduction overviewed: the general purpose and format of the Exercise; required team tasks; student requirements and expectations; team guidelines (e.g., teams have the right to expel members for “unreasonable behavior or poor performance”); and evaluation policies (e.g., \$110 U.S. dollars per contributing member for the winning business plan). Submission of an entry form that included contact information (e.g., email address) and a consent statement made the student eligible for participation. The Coordinator then formed teams using the procedures described above and notified members of their team assignments on the first day of the Exercise.

Activities in the beginning weeks encouraged member communication and initial preparation for the project. On Monday of the first week, the Coordinator emailed the Greeting Your Team task instructions to the subjects, asking them to

introduce themselves to their teams by answering several questions about their backgrounds, interests, and expectations. On Thursday of the first week, the Coordinator made team websites available, which included instructions for each of the subsequent team tasks. The Team-Building Decision task, scheduled at the end of the first week, encouraged members to practice working together by performing a simple decision task (i.e., selecting an additional, fictitious team member to complement the current members' skills and interests). The Coordinator also requested that the team report any "missing" members by Monday of the second week, so any technology or other issues hindering member participation could be quickly resolved. The next task, Preliminary Research, asked members to research electronic commerce in their home countries, share their findings with the team, compile their findings into one team report, and submit the report by the end of the third week. This required task was constructed (a) to expose members to content-related issues that could be useful when writing the business plan and (b) to allow members to work separately and then integrate their individual contributions. Following submission of this deliverable, the Coordinator acknowledged receipt, noted what members had participated, and addressed any issues raised by the team.

Activities in the middle weeks of the project put more emphasis on task planning and team management. The Task Planning task instructions asked teams to discuss several questions about the content for their business plan and their expectations for teamwork.⁵ Based on these discussions, the Status Report task

⁵ Thirty-five teams received a manipulation to ensure that some teams gave at least minimal consideration to the opportunity for control enactment. As a component of the task planning exercise (see Appendix A), teams randomly assigned to the treatment condition encountered

instructions required teams to summarize in a short memo the idea for their new business, how they planned to manage completion of the business plan, and any issues that required outside attention from the Coordinator. The Task Planning Update instructions encouraged teams to revisit their plans two weeks later to make any changes necessary to improve the functioning of the team.

The final task required preparation of a Business Plan on a team-selected topic involving business-to-business electronic commerce; this task challenged teams to develop a creative solution to an unfamiliar task in a short timeframe. To clarify expectations for the business plans, a template was provided on the website to offer some guidance about the structure and content of the finished product. This task (a) provided a high, but reasonable level of difficulty, (b) offered flexibility in the approaches the teams could use to accomplish the task (e.g., “divide and conquer”, collaboration on all aspects), and (c) suggested a reasonable expectation that collaborative teams would be superior to teams where one member did all the work. The Coordinator answered questions from specific teams about the tasks as well as giving periodic instructions to all teams about the tasks.

The next section explains the data collection procedures for all teams in the educational exercise.

specific questions to encourage explicit consideration of various control mechanisms (e.g., What rules are necessary...? When will the draft deliverable be completed?). Neither condition was actually prevented from nor required to adopt control mechanisms. Analysis of variance suggests that the treatment did not have a significant effect on the average levels of control, control mechanisms, or trust, despite a significant difference on the manipulation check.

3.2. DATA COLLECTION

Data collection for this dissertation ran concurrently with the educational exercise. This section describes the data sources – archives and surveys – as well as the nature and uses of the data.

Archives

The communication tools archived all team communication sent via GVT technologies (i.e., listserve, bulletin board, chat room, file sharing), offering rich archival data for this dissertation. While team members could not be prevented from communicating in other ways, this archive represents the official record of communication to the entire team as well as some “private” communication among individual members or with the Coordinator. As noted above, the Coordinator made some attempts to discourage use of other technologies (e.g., students were told that participation statistics provided to their faculty sponsors would be based only on GVT technologies), but other technologies were not prohibited. The required deliverables – research report, status report, and business plan – provided an additional source of data. Printed archival data for a sample team with average amounts of communication exceeded 200 pages.

Surveys

The Coordinator used four web-based questionnaires to collect survey data at the times displayed in Figure 3.1 above. (See Appendix B for additional information about selected survey measures.) Beyond the contact information noted above, the Entry Form collected information about member demographics, background, and expectations before team members had the opportunity to

interact. The Early-Exercise Survey captured members' initial perceptions and attitudes toward the task (e.g., task uncertainty) and team (e.g., clan commitment); measuring in the second week allowed teammates to have enough interactions to form an opinion while being early enough in the project that these opinions might not endure. The Mid-Exercise Survey occurred just after the status report deadline, providing the opportunity to assess perceptions (e.g., level of control) of the team after the completion of two small deliverables as well as measuring control mechanisms that had been enacted by the team to that point. The Exit Survey captured many of the same perceptions following the completion of the project as well as peer evaluations of member participation. The final two surveys included an open-ended comment section where subjects could volunteer additional information.

The Coordinator took several steps to achieve an adequate subject response to the surveys. First, the Entry Form was required for participation in the Exercise, so the response rate to the first survey was 100 percent. (See procedure for the Entry Form under Subjects.) Second, the Coordinator sent a general invitation to complete each survey, a general reminder a few days later, followed by a personalized reminder a few days after that. Third, the Coordinator publicized that for each survey, all responses submitted by a specified date were entered into a lottery where one recipient would win \$100 U.S. Dollars. These procedures were highly successful for a non-experimental study because the response rate for each survey was above 80 percent and the listwise response rate across all surveys approached 70 percent.

Nature and Uses of Data Collected

The communication archives provided a very rich source of data that were the primary focus of this dissertation. Although the communication archives capture the interaction of team members, the investigator could only make reasoned inferences from this data about the actual perspectives and attitudes of the participants. However, the data are quite unique because they have the potential to capture all of the interactive stimuli to which participants were exposed as they worked with their teammates around the world.⁶

The survey data will be the subject of a separate quantitative analysis, but it was useful to the qualitative study in at least two ways. First, as will be discussed below, the measures of control aided case selection, allowing the investigator to select diverse cases on a measurable basis. Also, because the surveys more directly captured some of the attitudes and beliefs of participants, information from the surveys (e.g., open-ended comments at the end of the survey) provided additional evidence for assertions made about the archival data.

A final caveat about the data is that participants were promised that their identities would not be revealed. As such, this dissertation disguises the identity of all participants and teams. The next section explains how I selected the specific teams that were included in the analysis.

⁶ Some participants chose to by-pass archives by communicating more directly (e.g., regular electronic mail, etc.). To reduce any impact on the qualitative analysis, the case selection criteria ruled out teams with less than average communication archives, but high self-reported communication through technologies that were not archived.

3.3. SELECTION OF TEAMS

This section explains how I selected three teams for analysis. Because I collected the same archival and survey data on each team in the educational exercise, I delayed the selection of specific cases until the data analysis phase of my work. I then followed suggestions that case selection should be guided by theoretical sampling (Eisenhardt, 1989; Strauss and Corbin, 1998), and I made selections of subsequent cases based on what I learned from previous cases.

Team 1 was initially chosen to serve as a pilot case study, and I retained the case in the final study of three teams. The purposes of the pilot study were to refine the research question and gain familiarity with the data (see section 3.4.1). Since the quantitative data had not been analyzed at that point, I randomly chose one team as a preliminary case to study. The initial analysis of this case identified several processes and structures that seemed relevant to control (e.g., monitoring and pressuring team members, firing a team member). Subsequent quantitative analysis suggested that this case had average levels of control at the middle and end of the project. After the pilot study, I decided to include this team in the multi-case study because it displayed theoretically interesting features (i.e., control processes and structures were present) and because it could serve as an exemplar of a team with average levels of team control.

I selected teams 2 and 3 to theoretically sample teams with potentially different control features. In contrast with team 1's average levels of perceived team control, team 2 displayed the highest average for level of control across the middle and end of the project. The analysis of team 2 identified several control

processes and structures, with notable differences from team 1 in the way control was enacted. At the same time, teams 1 and 2 maintained relatively constant control features over time, as seen in the qualitative analysis and survey measures. As such, I chose team 3 to identify a team that experienced some change in control. Team 3 reported the largest increase in perceived level of control from the middle to the end of the project. After analyzing within and across these three teams (see section 3.4 below), the diverse control characteristics of these cases combined with a convergence of concepts and relationships across teams gave me confidence that I had experienced theoretical saturation, suggesting that the benefit of additional cases to this dissertation would be limited (Strauss and Corbin, 1998).

For the selection of teams 2 and 3, I applied additional criteria to ensure that useful cases were selected. Teams were excluded from consideration if:

- The team did not have a high value on at least one of the control mechanisms (i.e., rules, deadlines, or monitoring). (This gives some confidence that perceived team control measures control and not something else.)
- The team did not display at least reasonable agreement about the presence of perceived team control. (This retains confidence that this is a team phenomenon, rather than an individual one.)
- Fewer than 2 team members completed each survey. (This keeps the opportunity to triangulate some findings.)

- The team was in the lowest 10% of GVT communication frequency. (I needed each team to have sufficient interaction to analyze.)
- The team did not use non-GVT communication channels for a substantial portion of their communication. (It would have been difficult to piece together a story-line if a great deal of the communication were missing.)

During the selection of teams 2 and 3, one team had to be eliminated from consideration for violating more than one of these criteria. The next section explains how I analyzed the data for these three teams.

3.4. DATA ANALYSIS

The objective of the data analysis was to help me build theory about control enactment in global virtual teams. This analysis draws upon a variety of suggestions about how to build theory using qualitative data (e.g., Langley, 1999; Miles and Huberman, 1994; Yin, 1994). This section describes several issues about how I conducted the analysis, including: (1) pilot case studies, (2) development of a preliminary conceptual model, (3) within-case analyses, (4) cross-case analyses, (5) theorizing, and (6) issues of validity.

3.4.1. Pilot Case Studies

As suggested by several researchers (e.g., Bogdan and Biklen, 1998; Yin, 1994), I conducted pilot case studies before the final study. The first of these efforts resulted in a term paper for a qualitative methods class. I considered three teams from the 1998 GVT Exercise, developing the concepts of uncertainty, trust,

and control and some tentative relationships among these concepts (Crisp, 1999). The second pilot study was conducted in preparation for the dissertation proposal. My analysis of one team from the 2000 GVT Exercise focused on the concepts of control and monitoring (see introduction of team 1 in section 3.3).

These pilot case studies were useful for several reasons. First, these cases helped me practice techniques and become more sensitive to issues related to qualitative research. For example, these were my first exposures to writing descriptive narratives (Pentland, 1999), developing concepts and coding schemes from data (Strauss and Corbin, 1998), and selecting cases using theoretical sampling (Eisenhardt, 1989; Strauss and Corbin, 1998). Second, the pilot studies gave me the opportunity to become more aware of conceptual and contextual issues relevant to the study. For example, I paid considerable attention to the properties and dimensions of monitoring and determined that monitoring needed to be a central concept in my theorizing about control. The pilot studies allowed me to gain familiarity with the data that helped me to refine my understanding of the research question and to determine what existing literature might be relevant to my question.

3.4.2. Preliminary Conceptual Model

Following the pilot case studies, I consulted existing literature to provide a stronger foundation for my qualitative analysis. Eisenhardt (1989) recommends that researchers engaged in theory-building case research use the literature to identify relevant concepts but avoid thinking about hypotheses or theories at the outset of the research. After an extensive review of several literatures (e.g.,

control, teams), I identified processes and structures potentially relevant to control and organized these concepts into a preliminary conceptual model, allowing for all possible relationships among the concepts. As additional cases were added, I revised this model on several occasions until reaching the preliminary conceptual model described in chapter 2.

While aware of previous findings in the literature, my focus in the analysis was on those concepts and relationships identified in my data. The preliminary model served as a prompt to begin the questioning process and was adapted to reflect and organize the results (see similar approach recommended by Carroll and Swatman, 2000). Recent virtual team literature has used theory- or literature-driven strategies for similar purposes (e.g., template coding in Maznevski and Chudoba, 2000). Similar to recent examples of case study research on information technology (e.g., Orlikowski, 1993), control (Kirsch, 1996), and global virtual teams (e.g., Jarvenpaa and Leidner, 1999), this analysis is intended to make a contribution to theory that is both grounded in the data and integrated with prior research. This approach differs from “pure” grounded theory in that there are pre-determined research questions and preliminary concepts guiding the analysis. It differs from theory testing in that the concepts and relationships are modified to fit the data. The next section explains how I conducted the analysis for each team.

3.4.3. Within-Case Analyses

This section explains the procedures used to analyze each of the three teams in the study. Preliminary analyses were conducted first and provided the

foundation for the analysis of each case. The description of episodes and analysis of processes are central to the analysis of each team presented in chapter 4. Although the case analyses for each team were performed at slightly different times, the analytical process was necessarily iterative within and across cases, so that the final analysis and presentation of each team was performed in a similar way.

Preliminary Analyses

The analysis of each team began with three important steps: writing a detailed narrative of the case, identifying team episodes, and coding the raw data about the team. Each step is described below.

Detailed Case Narrative – Narrative or textual description can be a highly useful analytical device. This strategy involves construction of a detailed story from the raw data (Langley, 1999). This might include preparing a chronology for subsequent analysis or a more elaborate description to explain relationships within a sequence of events.

For each case, I prepared a detailed narrative that describes the timing and content of almost every interaction or message in the archive, attempting to faithfully capture the “voice” and emotion of the participants through quotes where appropriate. In situations where it would take more words to describe the content of the message than the number of words of the actual message, the original text of the message was preferred. During this process, I reflected on potential themes and concepts being identified, but the description was not consciously written with these categories in mind. The only exception is that data

clearly related to monitoring or control were more likely to be directly quoted. See Appendix C for the detailed narratives about each team.

Identification of Episodes – Temporal bracketing is a common strategy in qualitative research where similar, continuous events are grouped into periods of time (Langley, 1999). For example, Newman and Robey (1992) proposed the use of encounters and episodes to discuss interactions between analysts and users in systems development. These researchers identified and characterized each episode in terms of a certain type of relationship between the parties (e.g., joint development, user-led development), and they identified encounters as defining events that altered this relationship. As an analytical approach, temporal bracketing is particularly useful for studying mutual influences among actions and structures; decomposing “data into successive adjacent periods enables the explicit examination of how actions of one period lead to changes in the context that will affect action in subsequent periods” (Langley, 1999: 703).

Using temporal bracketing, the unit of analysis for this study becomes the episode, a distinct period of time that contains one or more related team events. These events (a) involve one or more of the same *tasks or activities*, and they are similar in reference to (b) *who attempts to influence* (e.g., a specific team member or combination of members), (c) *how they attempt to influence* (emphasizing the kind or intensity of influence rather than the type of influence), and (d) the patterns of *response to influence*.⁷ Each episode begins with an event that alters one or more of the team characteristics just noted. The application of condition A

⁷ I am intentionally using “influence” rather than “control” so that I do not rule out ways that control may occur or change. Influence can be task-oriented or people-oriented.

created a minimum of four episodes for each team, and imposition of the other conditions brought the final number of episodes to 6 for team 1, 5 for team 2, and 6 for team 3. Table 3.2 highlights one or more reasons for each transition to a new episode, and Table 3.3 summarizes the primary GVT task or activity for the teams during each episode.

Coding – I coded the data using the NUDist 4.0 software. This software served as a database to maintain the raw data and the coding of the data. One line of text served as the primary coding unit. I coded the data using the concepts identified in the preliminary conceptual model in chapter 2 and the episodes just introduced. This coding was not for quantification purposes; it simply provided a means for later retrieving text that was relevant to control processes and structures for each team episode. Printed reports showing the raw data and coding assisted with subsequent analysis of the data. See Table 3.4 for a listing of the concepts in the coding scheme.

Once I completed the detailed narrative and coding of the concepts and episodes, I then prepared a description of team episodes.

Description of Episodes

The description of each team episode attempted to provide a sense of the events within each episode that relate to how control was enacted. I relied on two tactics to convey this information: an event listing table and a narrative summary of the episode. These analytical tactics necessarily differentiate between incidents (actual occurrences in context), events (theoretical constructs summarizing incidents), and episodes (set of similar events that are temporally adjoined).

Event Listing Table – An event listing table is a matrix that arranges a series of events by chronological time periods, sorting them into several categories of interest to the research (Miles and Huberman, 1994). After reviewing the raw data for each process or structure, I summarized key features of the processes, structures, or outcomes in the event listing table. Categories in the preliminary conceptual model provided the row headings, and episodes provided the column headings (i.e., each cell characterizes events related to one process or structure during one episode). This use of episodes and “group process” categories is similar to a more quantitatively-oriented approach recommended by Van de Ven (1992: 185). These tables were particularly useful in complementing the narrative presentation of the episodes.

Narrative about Episodes – I then wrote a narrative, summarizing important events from the detailed case narrative as well as the event listing table. This description provides a sense of the timing and nature of key events within each episode, especially those relevant to processes, structures, and outcomes identified in the preliminary conceptual model.

Once I described the episodes, I then analyzed changes in team processes over time.

Analysis of Processes

To explain how each team enacted control, I used each major concept identified in the preliminary conceptual model as a lense to examine control within and across episodes. As the central concepts of interest, team control and monitoring processes were given primary emphasis in the analysis. However, the

analysis also includes contributing team processes (i.e., technology appropriation, coordination, and production) and contributing external processes that impacted control and monitoring. I relied on two tactics to convey this information: a change matrix and a narrative about these concepts.

Change Matrix – A time-ordered matrix (i.e., a change matrix) can be arranged by time period to show when a particular phenomenon occurred or changed (Miles and Huberman, 1994). I built the change matrix by reflecting on key events in the event listing table and episode narrative. For some concepts in the preliminary conceptual model, additional subcategories were identified inductively as a basis for comparing across episodes. These tables were particularly useful in complementing the textual presentation of the analysis.

Narrative about Processes – The textual analysis examines process issues within and across the team episodes. The purpose of the section is to explain the development and change of each process within and across episodes and to relate these processes to the development and operation of control.

The next section explains cross-case analyses performed for this research.

3.4.4. Cross-Case Analyses

The cross-case analyses explores similarities and differences in these teams that are relevant to control. These analyses form the basis for the results that are presented in chapter 5. This section explains the cross-case procedures used to prepare the major sections of the results chapter: (1) control enactment in team processes and (2) control enactment over time and across teams.

Control Enactment in Team Processes

My first objective in the cross-case analysis was to identify the concepts (i.e., processes and structures) that needed to be included in the results chapter; this was primarily accomplished by comparing across teams' "analysis of processes" in chapter 4. Basic criteria guiding this process were the ability to develop a *clear definition of the concept* and to establish *strong evidence or argument that the concept is connected to control*.

To identify concepts, I focused not only on specific events, processes, or structures that were involved in control enactment, but I considered how these might serve a similar function for control purposes. In some cases, this led me to present lower-order concepts than those included in the coding scheme (e.g., identifying structures as a part of team monitoring). In other cases, this process led me to induce higher-order concepts that showed commonalities among concepts in the coding scheme (e.g., specifying team structures and processes is a common feature of technology appropriation, coordination, and production). See Table 3.4 that compares the concepts in the coding scheme and the results.

To establish a connection to control, I needed to determine that the concept was, by definition, a form of control (i.e., an attempt to influence members of a collective to engage in behaviors that lead to the attainment of collective goals) or that the concept impacted control in some manner (i.e., it enabled or constrained the enactment of control). I included single events if they were verifiable, and there was enough evidence to establish the connection to control (e.g., team 1 fired a member by sending a memo to the Coordinator that

outlined their reasons for this action). Otherwise, the concepts were replicated on multiple occasions within or across cases, allowing me to understand the connection to control by examining separate events.

Next, I contrasted these concepts over time and across teams.

Control Enactment over Time and across Teams

My second objective for the cross-case analyses was to compare and contrast how control was enacted over time in each team; this analysis was conducted by constructing tables and making comparisons.

I developed two tables to show how the concepts I identified in the results chapter were used over time in each team. The first table (see Table 5.2) uses rows for the concepts and team episodes for the columns. I reviewed the within-case analyses in chapter 4 to make judgments about the intensity of each concept within each team episode. The second table (see Table 5.3) presents the sequences of these processes within episodes and how they changed across episodes. I reviewed the detailed narratives in Appendix C as well as the within-case analyses in chapter 4 to determine the sequencing of the concepts.

I also made comparisons to build my findings. First, I compared the configuration of team processes used in each team (see Table 5.2) and determined that there were similarities and differences across teams. Upon reflection, I hypothesized that two configurations of processes might unify my findings about the three teams; that is, I induced higher-order concepts of control, which I termed commitment and compliance. Second, I compared changes in the processes and structures across team episodes (see Table 5.2). By comparing major changes

across teams, I was able to gain some understanding of what led to changes in control enactment. Finally, I compared the sequence of processes used within and across teams (see Table 5.3). For the discussion in chapter 6, I connect the differences in sequences I observed with the concepts of commitment and compliance. The next section further explains how I theorized about my findings.

3.4.5. Theorizing

In the discussion of my results (see chapter 6), I theorize about how control is enacted in global virtual teams. This section explains how I prepared the major sections of the discussion chapter: (1) toward a process model of control enactment in global virtual teams and (2) member monitoring.

Toward a Process Model of Control Enactment in Global Virtual Teams

My first objective in theorizing about my findings was to build a process model about control enactment in global virtual teams. The origins of the model can be seen in the preliminary conceptual model, which attempted to reflect concepts and relationships that prior literature implied would be important to control in global virtual teams. By reflecting on the results about control enactment, I reshaped the preliminary model to reflect concepts that were consistent with my data and to show the sequence of these concepts over time. Then, I again returned to the literature to triangulate and contrast my findings with the existing literature. Other important activities that informed my theorizing included: conversations with colleagues about my findings, presentations at a research seminar and a conference, and the repetitive cycle of writing and rewriting my results.

Member Monitoring

My second objective in theorizing about my findings was to examine one concept from the model in greater detail. My review of the literature combined with my pilot case studies suggested the need for a richer understanding of monitoring behaviors in situations where physical observation is precluded. By reflecting on the within-case and cross-case analyses about member monitoring, I reconceptualize the concept of behavior observability from the control literature, showing that it is more than a static contextual variable. My theorizing about member monitoring also benefited from the conversations, presentations, and writing iterations mentioned above.

Finally, I consider the validity of the analysis.

3.4.6. Issues of Validity

Although the process of theorizing is always somewhat idiosyncratic to the researcher, I have taken several steps to help the reader assess the validity of my findings. In particular, the reader may wish to examine construct validity (correct measures of the concepts), internal validity (establishing a relationship between concepts), reliability (procedures could be repeated with the same results), and external validity (generalizability) (Yin, 1994). Here, I briefly reiterate tactics I followed to address these concerns (Miles and Huberman, 1994; Yin, 1994).

Use of literature – I began the study with concepts drawn from the literature. As I refined these concepts and identified relationships in the data, I compared and integrated my findings with the literature.

Multiple sources of evidence – Where possible, I based my findings on multiple sources of data (e.g., archives and survey comments). In addition, I looked for the replication of findings within and across cases to give some assurance that I understood how the event related to control.

Description of method and presentation of analyses – I provided an extensive description of the research setting and analytical procedures and presented the actual analyses performed. This allows the reader to examine my work at varying levels of detail (e.g., detailed case narratives, within-case analyses, cross-case results). This “chain of evidence” (Yin, 1994) permits deeper examination of my findings and provides an opportunity to replicate some of the analyses. This material should also help others assess the generalizability of my findings to other contexts.

3.5. CHAPTER SUMMARY

This chapter described the method used to collect and analyze data for this dissertation. After an overview of the research setting for this qualitative study, major sections of this chapter explained the procedures used for data collection, selection of teams, and data analysis. The next chapter presents the within-case analyses.

Chapter 4: Analysis

This chapter presents an examination of three global virtual teams. The purpose of these detailed analyses is to reveal how control was enacted in each team, with particular attention to processes and structures contributing to control in the global virtual team context. Based on the analysis approach explained in chapter 3, the presentation of each team includes three major sections:

Introduction – The first section for each team introduces the team members and summarizes how each member contributed to the team. The remainder of the introduction overviews key control-related events and issues that are further developed in the subsequent sections.

Description of Episodes – The second section for each team provides a sense of the timing and nature of the events within each team episode, especially those relevant to processes, structures, and outcomes identified in the preliminary conceptual model (see chapter 2). An accompanying table summarizes the textual description with columns for episodes and rows for processes, structures, and outcomes (see chapter 3 for information about the construction of this table).

Analysis of Processes – To explain how each team enacted control, the third section uses each major concept identified in the preliminary conceptual model (see chapter 2) as a lense to examine control within and across episodes. As the central concepts of interest, team control and monitoring processes are given primary emphasis in the analysis. However, the analysis also includes contributing team processes (i.e., technology appropriation, coordination, and

production) and contributing external processes that impact control and monitoring. The textual discussion also refers to team and external structures that are relevant to control enactment. An accompanying table highlights changes in each process across episodes (see chapter 3 for information about the construction of this table).

The three sections below present the analysis of teams 1, 2, and 3, respectively.

4.1. TEAM 1

This section explains how control was enacted in team 1 by introducing the team, describing team episodes, and analyzing team processes.

4.1.1. Introduction to Team 1

This section begins with a brief introduction to the team and its members. Team 1 had three members who were located in Brazil, Finland, and Mexico (with minimum and maximum time zone differences of 3 and 8 hours, respectively). They completed both the preliminary research and status report on time and submitted the business plan on the official due date. Team 1 developed a business plan for Triangle Relocation Services, a web-based company providing relocation information and services to executives from international companies. This business name referred to team members' three locations, although one member joked that it was just a "Triangle from continent-to-continent." The final business plan report only listed the names of two of the three members. Team 1

reported levels of control at the middle and end of the project that were around the mean for all teams in the GVT exercise.

Team 1 comprised MA, HR, and AO. (A fourth assigned team member never contacted the team; the Coordinator reported CN's official withdrawal in the second week of the project.) MA was the most active member and served implicitly as the leader; she initiated almost all of the team's activities over the entire project including many of those related to control. HR responded consistently to MA's messages and provided increasing task contributions so that the final business plan was his idea and a substantial portion of his content. As judged by his teammates, AO was infrequent in his communication, slow to respond, and he made only small contributions to the initial tasks. His teammates removed AO from the team when they did not receive a usable contribution to the final business plan report.

Many of the control-related events in team 1 were directed at AO. HR stated in his exit survey, "We kick out of the team AO because [he] *did not work as expected....* [emphasis added]" (See Figure 4.1 for the message sent to the Coordinator to justify this decision.) MA also explained in her exit survey:

Everything went extremely well with me and HR. AO would *disappear for days* and after we had done most of the work with HR *we had to kick AO for several days to have him write a few comments*. The same thing happened in all the tasks. HR and I did all the work and AO would comment the result. Finally *he went on holiday and did nothing for our business plan* and then *we decided to fire him*. He hadn't contributed one comment although *we had been sending him several mails asking him to find information* about [Country A] the same way me and HR searched information of [Country B] and [Country C]. We were so angry with him we couldn't write his name in our business plan as he had left us in trouble and vanished for next 10 days... [emphasis added]

Together, these comments from HR and MA suggest that both felt a need to exert control in this situation and that they attempted to do so. In other words, members of team 1 monitored AO's behavior and determined that action was necessary to regulate his behavior. When coordination, monitoring, and control efforts failed to achieve the desired result (e.g., receipt of a usable marketing plan section), HR and MA implemented a more drastic control tactic by terminating AO's team membership.

AO showed awareness of these behaviors in his exit survey:

MA became naturally the leader of the group. She was the one who gave opinions and did the tasks at first. But sometimes *she was quite unfriendly and even rude with me, because she did want the tasks to be done very fast*, but she might have forgotten that I had told the group I was undergoing an exam period here at FGV and I would delay a bit. But I have never sent any task out of schedule. *The worst thing that happened was the fact that she did not include my name on the final task.* That happened because I had a travel. It was booked six months before the beginning of GVT and it was impossible for me to unbook it and I let the whole group know I was to travel. But, I have my mind clear that I have done the previous tasks putting my best, sharing my opinion with them and taking some decisions with them either, even though I found this kind of virtual work quite difficult to be successful. [emphasis added]

These quotes from the exit survey support that team 1 attempted to exert control and that AO was aware of these efforts. The next section describes each of team 1's episodes.

4.1.2. Description of Team 1 Episodes

This section describes each of team 1's six episodes. Following limited communication for the greeting exercise at the beginning of the first week (episode 1), team 1 accomplished the personnel selection (episode 2), preliminary

research (episode 3), and the task plan and status report (episode 4) during the first four weeks. For each of these tasks, MA proposed how to complete the task, monitored team and member progress, and pressured other members to contribute. Team 1 made little progress on the business plan in weeks 5 and 6 of the project (episode 5); MA expressed difficulty organizing the task while all members noted competing outside commitments. MA and HR collaborated to complete the business plan and removed AO from the team (episode 6). In addition to the textual description below, Table 4.1 summarizes this case using columns for episodes and rows for processes, structures, and outcomes. (See the introduction to this chapter for more information about the table.)

Episode 1: Greeting

Responding to the instructions from the Coordinator, MA sent a greeting message on Monday of the first week, followed by HR on Tuesday and AO on Wednesday. CN did not contact the team. Members described personal and professional interests and experiences with a few sentences in response to each recommended question. They also recognized potential obstacles to effective teamwork, such as time zone differences and the sole use of electronic communication. However, beyond a simple greeting (e.g., AO: “Hi Group 1!!!”), members did not engage in additional social- or task-oriented dialogue. In fact, this was the only message each member sent during the first four days. On Thursday, the Coordinator provided access to the team’s website and informed that the team was unlikely to receive additional members.

Episode 2: Personnel Selection

On Friday of the first week, MA called the team to action, “According to the schedules the first task has already begin and ends TOMORROW and that means we all should do something quickly.. :)” After proposing work steps such as a chat meeting, MA ended the message, “have a nice weekend and work hard.. :)” MA wrote two hours later,

now you can find my personnel selection list in our bulletin board. Add your lists there too because they are watching how active we are through these web pages. All the comments in chat area + bulletin board + file sharing part will be visible for those who evaluate our work. So add lots of stuff on those pages so we'll get good marks of this project.. :)

Team 1 publicly monitored behavior through observations of communication (MA noted that CN “hasn't contacted us”), inquiries (MA: “Have you already checked our group’s homepage?”), and explanations of personal behavior (AO blamed his delayed response on a computer “crash”). Unfortunately, monitoring may have contributed to the ‘confusion’ that led to a failed chat meeting (HR explained: “I check the e-mail saturday around 4:00PM and believe that you did not read it, so I did not check mine on sunday morning.”). The other members apologized to MA for their absences. Nevertheless, team 1 posted rankings of the candidates to the bulletin board, resolved ranking differences (by minimizing their importance), and submitted the personnel selection memo on Monday of week 2. Following a request that each team report inactive members, each member separately notified the Coordinator that CN had not contacted the team.

Episode 3: Preliminary Research

As team 1 finished the previous task, MA proposed that members complete their preliminary research on each home country by the next Monday. MA then wrote that she was searching for information and:

...felt that I might not be doing it right.. Do you think it would be good if we all would upload our plans/documents to the 'file sharing' no matter how drafts they are? I was thinking it might be helpful to see what you've done and how you've started with your work. I have mainly copy-pasted information from the web and I haven't really found too much of RELEVANT information. I just thought it might be easier if I could check your drafts once and a while to see what kind of documents you're writing..."

The next day, MA provided some hints for using the file sharing area, updated the team on the draft she posted there ("it is not even NEARLY ready"), and encouraged, "Add your drafts there too so we can check how the others have thought about the task. A little help in doing this.. :)." She also requested a picture ("I'm a bit curious to see what you two look like."). During this period, HR provided some updates on his research, and AO explained to the Coordinator why they did not use the chat room for the previous task. The Coordinator informed on Wednesday that CN withdrew from the class and reminded on Monday of week 3 about the approaching task deadline.

Also on Monday, MA provided the "third version" of her research and asked, "Do you think you can get your reports ready today? It's not that we're in rush or anything. We have time till Friday...." "After years and years :-)" , AO provided his country research on Wednesday. Both AO and MA reminded that the task would have consequences for their grade if the report were not submitted

by the deadline. On Thursday, MA provided a report with “AO’s and my documents only but at least you can imagine how it’s going to look when HR’s part is added....” HR contributed before a deadline imposed by MA (when MA said she would submit the report), then MA compiled and sent the report.

Episode 4: Task Plan/ Status Report

A few moments later, MA prefaced her suggestions for the task planning activity, “So now we have to start the next task.. Can you take a look at it during the weekend? It should be ready on Wednesday and I can’t do anything then – the whole day is already booked.” The next day, MA answered and HR commented on the task planning questions, which they posted in files on the bulletin board. For example, in response to a question about peer evaluations, HR wrote: “I think we need to trust everybody will do its part, I think the evaluation will not force us to work, it’s a consequence of our work.” The Coordinator noted that each member had contributed to the preliminary research and stressed the importance of completing the task planning activity in preparation for the status report.

After another chat attempt failed where MA “got fed up waiting” for the others, MA asked AO to comment on the task plan and posted a revised file where she selected HR’s idea for the business plan (admitting two weeks later, “I was wondering what kind of Internet service that was you meant.”) and edited team expectations for technology use. AO explained that he entered the chat room at the proposed time, but AO agreed that they should rely on email instead of chat. HR provided additional comments on the file. In the task plan, the team had

identified a target date for the rough draft, holidays and other schedule conflicts for members, and some vague subtasks (e.g., “Everybody will search for potential customers for this new business.”).

MA reminded AO again on Tuesday to provide comments on the task planning draft and noted that they would “lose points” if the status report were not submitted by Friday. MA posted a revised task planning report “without AO’s comments” and drafted a status report in which she suggested for the business plan task:

And we have to set also other goals than just the final deadline. We have to divide this job into smaller pieces that will have deadlines of their own. That way we’ll avoid the situation where one had thought of making his/her part on the last day and the others have to wait for that to proceed.

HR also asked AO for comments on the task plan, which AO had just supplied a few minutes earlier, then AO finalized and sent the task plan at the request of HR. MA edited the status report to include AO’s thoughts, and AO expanded, revised, and sent the report after MA asked for volunteers.

Episode 5: Business Plan Early

Team 1 began consideration of the business plan task. In response to AO’s submission of the status report, MA wrote, “Thanks.. it was great. And then.. should we make some deadlines for our next activities?” MA requested two days later that others suggest a plan for the task (“I don’t seem to know where to start.”). MA also posted a document on the bulletin board which provided some of her comments in response to the recommended sections of the business plan. With the exception of AO explaining he was “extremely busy at college this

week,” members did not communicate publicly for more than a week. The Coordinator, in addition to answering team 1’s status report questions, encouraged all teams to keep working toward the approaching deadline and reminded that bonus (or penalty) points would be awarded for early (or late) submission of the plan.

On Monday of week 6, MA recognized the need for action (“We should be starting to do something already.”), explained that she had four exams that week (“I don’t really have time for anything.”), and asked if they thought the work could be completed in time for the deadline if they started the next week. HR said he would research the business concept and post his results by the end of the week. After the Coordinator reminded that the deadline was “just two weeks away,” MA inquired about other members’ holidays and wrote, “...let’s try to be active next week so that we could finish this on time.”

Episode 6: Business Plan Late

Team 1 became active in producing the business plan. HR and MA individually drafted and then traded compliments and comments on iterative versions of a list of open issues, a description of the business concept, and a website design. They drew ideas from interviews HR conducted and an example website MA found. Both HR and MA initiated activities, requested comments on output, and gave directives about what needed to be done. MA suggested specific subtasks for each member and inquired the next day,

AO, have you already checked the new documents in our file sharing page? Is it ok with you if you did the marketing plan for us? HR has

collected a lot of information about an existing real estate service so read the documents and if you need more information ask HR.

AO agreed, “Surely I can do the marketing plan! I’ve vanished for some days because I’ve been VERY busy at college, stuffed with exams and assessments. I’ve got good texts about marketing and I’ll use them to our b-plan..” A few days later (nearing the time for his scheduled trip), AO provided a corrupted file for his contribution and did not respond to MA’s subsequent inquiry about the file. HR deleted any references to AO in the business plan (“[AO] is on vacation and we are working hard.”), and HR and MA later sent an email message to the Coordinator explaining their reasons for “firing” AO. The Coordinator provided reminders of the task requirements and the final deadline.

In addition to completing their previous individual subtasks, MA and HR shared responsibility for most parts of the business plan. MA loaded the GVT business plan template in their file sharing area and informed via the listserve:

.... I tried to fill in some of the parts but it was too difficult. I was thinking we could all fill it part by part so that every time we have time so think about it we would gradually fill in the whole report. Maybe I’ll have an idea after I seen some of your ideas and you can have ideas based on mine.

.... The deadline is next wednesday. I suppose we have to be active on weekend..

HR drafted a substantial portion of the content, with contribution from MA in a few content areas and in organizing and finalizing the report. HR and MA posted interim versions in the file sharing area (adding content and making revisions in different colors) and reported what needed to be done and when they would be available to work. They submitted the final business plan on the due date, with an

exchange of gratitude to each other. MA described the plan as “quite good” despite their lack of knowledge and time to spend on the report.

Having described each of team 1’s episodes, the next section analyzes team 1 processes involved in control enactment.

4.1.3. Analysis of Team 1 Processes

This section explains how control was enacted in team 1 by discussing team control processes, team monitoring processes, contributing internal team processes, and contributing external processes and structures. Team control processes included specifying deadlines, pressuring members to provide output, and firing a member who did not contribute to the business plan. Team monitoring processes identified external deadlines and the team’s progress toward deadlines; members actively shared information about their own unseen behavior and conditions as well as monitoring the behavior and output of teammates. Team processes that contributed to control and monitoring included technology appropriation (e.g., use of the bulletin board and file sharing to post the latest version of documents), coordination (e.g., requesting that members share interim drafts of their research), and production (e.g., AO’s lack of contribution to the business plan led to his removal from the team). External processes and structures, such as the GVT deadlines and evaluation criteria, also impacted control and monitoring in team 1. By examining processes both internal and external to the team, this analysis reveals processes and structures that contributed to control enactment. In addition to the textual analysis below, Table 4.2

summarizes changes in processes across episodes (see the introduction to this chapter for more information about the table.)

Team Control Processes

As the team's informal leader, MA was the primary team initiator of control through the first five episodes. MA's early control-related efforts centered on motivating others to work on the project. For example, MA wrote in her second message, "...we all should do something quickly.. :)" and "have a nice weekend and work hard.. :)." During the preliminary research, MA asked the others on several occasions to share drafts of their research. MA explained why she thought this would be useful, but she made it clear that the timing was not urgent ("It's not that we're in rush or anything. We have time till Friday...."). She did set a time just before the official GVT deadline when she would submit the research ("Anyway I'll send it to the Coordinator tomorrow. So HR please try to send your part of this by the time I leave from work (that would be around 16.00 my time...)").

Control, in the form of pressuring, was more specific and direct in episode 4. MA asked AO to comment on the task plan draft 3 times within a 48-hour period ("AO, could you please add your comments to the bulletin board? The deadline is tomorrow and I don't have any time for this after today."). HR repeated this request twice; however, HR was not aware that AO gave some brief comments at virtually the same time. These events resemble MA's exit survey remark that they "had to kick AO for several days to have him write a few comments" and AO's exit survey comment that MA "sometimes ... was quite

unfriendly and even rude with me, because she did want the tasks to be done very fast.”

Team 1 did not explicitly discuss values or norms until they considered the task planning questions about rules and accountability in episode 4. In the task plan, they noted expectations for checking email and the bulletin board (“Every day / twice a day depending on possibilities.”) and sending email or posting bulletin board messages (“As needed but no less than every other day”). They proposed “Not doing work in deadlines?” as something that “could be considered unreasonable behavior or poor performance that could result in dismissal from the team.” As it turned out, this was one of the primary reasons AO was removed from the team in later weeks.

Blaming a lack of task knowledge and other school responsibilities, MA was not able to define new deadlines for the team and made minor attempts to motivate the team for work in the subsequent week. In an attempt to involve AO, team 1 made a more specific task assignment to AO, which he accepted after several days of silence. Ultimately, HR removed AO’s name from the plan because AO went on vacation without providing a useful contribution to the team.

Team Monitoring Processes

Team 1, primarily at MA’s initiation, actively monitored specific members and the team as a whole. The following paragraphs analyze this monitoring and suggest potential relationships and consequences.

In monitoring the team, team 1 focused on deadlines and task progress. From episode 2 through the end of the project, they reminded each other of the

deadline for the current task – often the official deadline set by the Coordinator rather than a team-imposed deadline. For example, in the first event of episode 2, MA wrote, “According to the schedules the first task has already begin and ends TOMORROW and that means we all should do something quickly.. :).” At the same time, members occasionally shared assessments of the current status of their collective work:

- “Do we need much more? I think this is starting to look like a business idea.” (MA referring to the task plan in episode 4)
- “...I have a feeling that it doesn’t require that much anymore.” (MA, in reference to the status report in episode 4)
- “We should be starting to do something already.” (MA referring the business plan in episode 5)

These assessments of task progress became more focused in episode 6 to highlight the open issues that needed to be addressed, possibly due to some combination of HR’s initiative, the large size of the business plan task, and overlapping responsibilities among members.

In monitoring team members, team 1 considered both behavior and output; monitoring of member behavior is examined first. Initially, team members paid attention to and primarily asked about teammate project-related behaviors they could not physically observe (e.g., accessing the website, reading instructions, checking email). In at least one instance, this led a member to privately make an assumption that proved to be inaccurate. After the failure of their first attempted chat meeting, HR explained why he did not attend the meeting: “I check the e-

mail saturday around 4:00PM and believe that you did not read it, so I did not check mine on sunday morning.” Inquiries and updates about members’ project-related work continued until episode 5, when the focus of the behavior monitoring shifted to contextual conditions (e.g., exams) that competed for members’ time and attention. In the final episode, behavior monitoring in the form of inquiries and updates considered project work as well as outside commitments that could interfere.

Although monitoring member behavior persisted throughout the project, increasing emphasis was placed on behavioral outputs that could be directly observed such as electronic communication and task output (e.g., ‘So noone seems to be in the chatroom’; ‘we’re missing your comments’; “I received several message[s] from you two yesterday”). In episode 2, all three of the active members notified the Coordinator about CN’s lack of communication. In episode 3, MA shared three versions of her own work and inquired when teammates would have their work ready (based on the observation that the others had not posted their work in the file sharing area). After MA’s active monitoring of communication and interim task output in episode 4, output monitoring in episode 5 was limited to simply recognizing the completion of the prior task. However, output monitoring did resume in episode 6. Team 1’s message to the Coordinator (see Figure 4.1), which explains their reasons for terminating AO’s team membership, provides additional evidence for the focus of output monitoring:

- Communication (“we did not hear from him very often”; “he got lost for several days and did not answer our emails on time”)

- Task output (“he was late on every assignment”; “he never send us any information”; “The marketing report received was an empty file with no information AT ALL.”)

As implied above, much of this monitoring activity can be attributed to MA, who initiated several incidents in each episode (except episode 1). While not recognized or formalized, MA’s monitoring behaviors developed into a repeated individual pattern across episodes that could be described as an implicit role. For example, team 1 began each new GVT task with a message from MA noting it was time to consider the task. MA persisted in these behaviors into episode 5, when she had greater difficulty due to a lack of specified subtasks and deadlines and due to her own competing time commitments. MA continued her monitoring behaviors in episode 6, but HR’s participation in monitoring became more significant and active, possibly in the wake of MA’s less intense monitoring in episode 5.

Finally, several factors may have influenced this monitoring as well as the actions, such as control, that accompanied and followed monitoring; these include:

- Importance of the task – Members clearly mentioned the potential grade impact of a deadline when one existed.
- Time and work remaining – In episode 3, MA took clear steps to minimize pressure since they had time (“Do you think you can get your reports ready today? It's not that we're in rush or anything. We have time till Friday....”). However, in episode 4, she wrote:

AO, could you please add your comments to the bulletin board? The deadline is tomorrow and I don't have any time for this after today. So if you can't add them today by 5pm my time, 12am your time, you have to finish it with HR tomorrow. And otherwise we just have to send the version we have by now. I'll still summarize it a bit.

- History of the team and member relationships – One of MA's more direct attempts at peer pressure ("AO: Add you comments as soon as possible.") followed their second failed chat meeting where AO did not attend.

Contributing Internal Team Processes

This section considers internal team processes of technology appropriation, coordination, and production. These processes directly impact control enactment by specifying which behaviors are monitored and controlled. These processes also indirectly shape control enactment by influencing the context in which control and monitoring occur among team members

Technology Appropriation – Team 1 employed several GVT technologies to accomplish its work. Throughout the project, team 1 used the listserve for the majority of its day-to-day communication. Statements on the bulletin board were usually repeated on the listserve, and they agreed to "no more chats" after two attempts were unsuccessful. Whereas the listserve was used primarily for coordination and monitoring-related communication, the bulletin board and file sharing area at the team website became the destination for production output (e.g., sharing files that contained initial drafts of work products, brief comments, or revisions to prior work). For example, in episode 2, MA proposed the file

sharing area as a place to deposit the most recent versions of work products and to view the status of other members' work. The practice of posting files continued after episode 3, although the actual content and form within the files was adapted to the particular task. It appears that almost all communication was publicly available to all members.

Coordination – Team 1 did not explicitly designate roles for its members, but MA served as the unofficial coordinator and leader of the team. As AO wrote in the exit survey, “MA became naturally the leader of the group.” In what became her routine at the beginning of each task, MA quickly drew attention to the task:

- “According to the schedules the first task has already begin and ends TOMORROW and that means we all should do something quickly.. :).” (personnel selection, episode 2)
- “And what was the next task..?” (preliminary research, episode 3)
- “So now we have to start the next task.” (task plan, episode 4)
- “And then.. should we make some deadlines for our next activities?” (business plan, episode 5)

In each of the initial tasks, MA reviewed the externally-determined task requirements and deadlines, translated these into suggested action items (e.g., subtask assignments for members, chat meetings, etc.) and interim deadlines for the team, and monitored the progress of the team and individual members towards these targets. MA also proposed changes when the process was not working as planned (e.g., failed chat meeting in episode 2) and attempted to equitably

distribute new subtasks among team members. In episode 3, this included a proposal to share interim drafts of their individual research (“I was thinking it might be helpful to see what you’ve done and how you’ve started with your work.... I just thought it might be easier if I could check your drafts once and a while to see what kind of documents you’re writing...”).

During episode 4, MA expressed the desire to define the process for the business plan task:

And we have to set also other goals than just the final deadline. We have to divide this job into smaller pieces that will have deadlines of their own. That way we’ll avoid the situation where one had thought of making his/her part on the last day and the others have to wait for that to proceed.

She repeated this desire at the beginning of episode 5, “And then.. should we make some deadlines for our next activities?” However, MA had difficulty determining how to segment the work; she explained:

Now we should decide some dates and deadlines. Like what do we do first and when does it have to be ready. We could decide that something has to be done by everybody by next friday but what would it be? I don't seem to know where to start. Make suggestions about how we start this business plan.

The only communication for the week following this request was AO’s message explaining that he was busy and he would look at the instructions later. The following week, MA wrote:

what are we going to do about the business plan? We should be starting to do something already.. The problem is that I have 4 exams and a project finalization this week and next weekend I won't be [in town]. So I don't really have time for anything.. Do you think if we did this next week we would be able to finalize this by the deadline?

HR defined a research task for himself in episode 5, and HR summarized open issues for the team to address in episode 6. Beyond assigning the marketing section to AO, MA and HR described what needed to be addressed at each handoff of the business plan.

Production – Members of team 1 made varying contributions to the team. In addition to her active coordination, MA was the first to contribute to the completion of each task. The other members followed her lead with some delay on each task. As AO wrote in the exit survey,

[MA] was the *one who gave opinions and did the tasks at first*. But sometimes she was quite unfriendly and even rude with me, because *she did want the tasks to be done very fast*, but she might have forgotten that I had told the group I was undergoing an exam period here at FGV and *I would delay a bit*. [emphasis added]

AO did not make a usable contribution to the business plan. Beginning with discussions of the business concept in episode 4, HR took a larger role in developing the content of the business plan. HR suggested the idea they developed for their business and later researched and drafted a two-page summary of the business concept. MA still contributed significantly to the final product and took responsibility for finalizing the report.

For each of the early tasks, team 1 varied the subtasks assigned to members and how the output of these subtasks was integrated. For the personnel selection activity, members (publicly) posted their rankings on the bulletin board and reconciled differences of opinion through the listserve. HR finalized and submitted the memo. In the preliminary research, members (privately) researched their home countries, (publicly) summarized their findings, and compiled the

summaries into one report. MA encouraged sharing interim findings, but other members only provided their final output. For the task plan and status report, members (publicly) suggested and discussed ideas for the business concept and how to accomplish the task. Team 1 reminded AO to provide comments when he had not done so. One member then edited the product before submitting it.

Subtasks and their integration also impacted the business plan task. In the early stages of the business plan, HR (privately) researched the business concept. Subsequently, after HR and MA exchanged ideas about the business, MA proposed an approach to developing the business plan:

I tried to fill in some of the parts [of the GVT business plan template] but it was too difficult. I was thinking we could all fill it part by part so that every time we have time so think about it we would gradually fill in the whole report. Maybe I'll have an idea after I seen some of your ideas and you can have ideas based on mine.

HR and MA each worked (privately) on the file, then (publicly) posted the file and provided suggestions and questions for the other to address. AO agreed to write the marketing section of the plan (and presumably did so privately); however, the file he submitted with his contribution could not be opened by the other team members and was not used. MA edited, finalized, and submitted the business plan.

Production in team 1 had implications for control and monitoring. For example, AO's lack of contribution to the business plan provided the impetus for his dismissal from the team. More subtly, although all of the subtasks were meant to result in output, some subtasks produced more immediate, frequent, or clear public output that could be monitored more readily by other members. MA's

suggestion to share interim output in episode 2 was one way that private work was shifted to public output. They did not attempt this again for AO's work on the marketing plan, which might have mitigated the impact of the technical problem that made his work useless to the team.

Contributing External Processes and Structures

Team 1 faced several external processes and structures that impacted the development of the team. Possibly the largest influence was the instructions at the team's website or through email communication from the Coordinator that directed the team. These instructions defined the requirements for each task and offered process suggestions that team 1 followed closely (e.g., scheduling a chat meeting; circulating the status report through the listserve for members to comment upon; etc.). Some external structures and processes, discussed next, subjected team members to direct external control or facilitated the development of control among team members.

Team 1 paid attention to several external structures that are relevant to control. One day after the GVT schedule and instructions became available at the website in the first week, MA noted the recommended deadline for the next task and alerted the team. This team monitoring marked the transition from the first to the second episode, since the team had not previously made any efforts to manage its collective efforts. Team 1 continued to monitor external deadlines through the remainder of the project, particularly when the deadline had implications for grading. Also, team 1 explicitly mentioned or discussed the grading criteria throughout the GVT exercise; including the following examples:

- MA wrote in episode 2: “Add your lists [at the bulletin board] too because they are watching how active we are through these web pages. All the comments in chat area + bulletin board + file sharing part will be visible for those who evaluate our work.”
- AO explained to the Coordinator in episode 3 the reasons they were not able to use the chat tool on the personnel selection task.

In addition, as one of the teams assigned to the treatment condition, team 1 encountered questions that explicitly reminded of the peer evaluations at the end of the project and of the team’s ability to remove a team member. As they discussed these questions, HR wrote: “I think we need to trust everybody will do its part, I think the evaluation will not force us to work, it’s a consequence of our work.” At the same time, HR was the one who actually removed AO from the team later in the project.

Another source of external control was Coordinator monitoring. The Coordinator asked each team in episode 2 to report any “missing” team members who had not contacted the team. At least one member publicly noted CN’s absence to the team, and all three active members notified the Coordinator directly. The Coordinator informed them the next week that CN had withdrawn. In addition, the Coordinator sent periodic reminders to warn the team of approaching task deadlines and noted any grade implications of these deadlines. One of MA’s monitoring messages in episode 5 followed quickly after a reminder. Finally, the Coordinator congratulated team 1’s completion of each task. For the preliminary research, the Coordinator also noted which members

apparently had contributed. Collectively, the Coordinator's monitoring efforts appeared to reinforce the existing external control structures and may have induced some of team 1's monitoring and control behaviors.

Having introduced, described, and analyzed team 1, the next section examines team 2.

4.2. TEAM 2

This section explains how control was enacted in team 2 by introducing the team, describing team episodes, and analyzing team processes.

4.2.1. Introduction to Team 2

This section begins with a brief introduction to the team and its members. Team 2 had four members who were located in Australia, Brazil, Finland, and Mexico (with minimum and maximum time zone differences of 3 and 13 hours, respectively). They completed both the preliminary research and status report on time and submitted the business plan two days before the official deadline. Team 2's business plan proposed: "ScreenPlan, LNI (local, national, international) On-Line Job Recruitment Program, will be the future of web-based job-hunting services available via electronic commerce."

Team 2 comprised DY, GO, PO, and RA. DY, who was named team "coordinator," publicly monitored contributions of members, finalized and submitted all of the deliverables, proposed the business plan topic, assigned responsibilities for the business plan, and, as a result, performed more of the team's work. GO actively participated in defining the project, identifying

examples, performing subtasks, and occasionally coordinating the team's efforts. PO completed all of his assigned subtasks, but communicated less regularly. RA attended one chat meeting, did not complete any subtasks, and became increasingly inactive until she withdrew from the team in week 5 due to "illness."

Survey results suggest that, in comparison to other teams in the exercise, members of team 2 perceived higher levels of control and greater use of control mechanisms at the middle and end of the project. Most of team 2's control-related events focused on task completion and member participation, as overviewed briefly in the following paragraphs.

From the beginning of the project, team 2 displayed a sense of urgency about completing the business plan. This could be seen in the expressed desire to begin quickly (GO: "I want to start soon") as well as their discussion of and agreement upon a long-range deadline for the completion of the business plan. In subsequent episodes, they shifted some emphasis to the completion of the interim required deliverables, especially in their monitoring and production. However, these were usually promoted as steps toward the completion of the business plan.

Team 2 valued member commitment and participation in the form of electronic communication and work output. In the opening days of exercise, team 2 "waited" for the first communication from team members and celebrated "we have a team" once the final member contacted the team. Members were highly task-oriented, showing commitment and enthusiasm (PO: "I'm happy to be working with people who take things seriously.... We'll kick ass on this business plan."; DY: "Let's start ... and kick some arse!!"). Team 2 stressed the importance

of “effort” and “sacrifice” to attend team chat meetings. Members apologized when they missed a chat meeting (e.g., three members did so at different times in episode 4), had a lapse in communication, or they felt they had not contributed sufficiently to the team (e.g., RA in episode 1; PO in episode 4). Team 2 showed some concern about RA’s participation (e.g., GO in episode 3: “Please we need to know about you...”), and this emphasis on participation may have had some role in her withdrawal from the team.

The next section describes each of team 2’s episodes.

4.2.2. Description of Team 2 Episodes

This section describes each of team 2’s five episodes. During the first two weeks (episode 1), members of team 2 greeted each other, scheduled and held their first chat meeting, and began to “define the project” by discussing guides and deadlines for the business plan. Team 2 completed the preliminary research task the next week under the leadership of DY, their elected team “coordinator” (episode 2). For the task plan and status report (episode 3), team 2 selected a guide to follow for the business plan and assigned subtasks to members. After RA’s resignation and some failed chat meetings (episode 4), team 2 completed and submitted the business plan (episode 5). In addition to the textual description below, Table 4.3 summarizes this case using columns for episodes and rows for processes, structures, and outcomes. (See the introduction to this chapter for more information about the table.)

Episode 1: Greeting/ Define the Project/ Chat Meeting

Responding to instructions from the Coordinator, PO and DY sent a greeting message on Monday of the first week, followed by GO on Tuesday and RA on Wednesday. Member greetings covered their work histories, interests, and potential team problems. For example, DY commented:

Over the next eight weeks, I would assume that there would be obstacles such as assignments, presentations or other non-related [university] work that will get in our way. Hopefully we can overcome these situations and make an effort to tackle these problems. As u said PO, "the problem here is the distance between us". May be later down the track, if we are able to get access to ICQ or IRC [chat software], it would probably be much more efficient / effective way of communication compared to the e-mail based systems. (The only problem is the time difference between countries - we should work out the time difference in order to converse in a reasonable time).

Team 2 “waited” for initial communication from other members and exchanged social and task-oriented messages in response to member communication. After clarifying the name and location of the three active members and noting the absence of a member, they celebrated when the fourth member contacted the team (DY: “Yeeehaaah!!! Welcome RA!! We have a team!!”).

During and after these greetings, team 2 began organizing their efforts for the project. They expressed the desire to start quickly (GO: “i want to start now”) and discussed target completion dates (DY: “I’m keen in getting this Business Plan out the way A.S.A.P. If we work hard, I believe we can knock it off at least 1st week of April.”). In welcoming RA to the team, GO explained that they were “... in the process to define the project that would do....” GO provided a proposal for a business idea, written in spanish, that he promised to translate when

he had time. Both GO and DY shared other documents through the listserve (e.g., GVT business plan template, winning plan from the 1999 GVT Exercise, an article on writing a business plan, etc.), and DY suggested that they pick one as a guide to follow. In addition, DY repeated “Important Absentees times” when members said they would not be available and listed action items necessary to schedule a chat meeting. Members exchanged several listserve messages to calculate time zone differences and scheduled the first meeting for the end of the second week. DY then encouraged:

Let's make an effort to our first meeting chat (I'm relying heavily on my loud alarm clock to wake me up at 5:30am!). Looks like plenty of coffee for u RA. Please let us know if any of u can't make it to OUR FIRST MEETING CHAT. 'Cause it would be very difficult if i was the only one there, especially early in the morning.

PO replied, “I'm sad about you, DY, that will have to wake up [so] early in the morning, but is part of the deal.” They also expressed some anticipation (RA: “I’m waiting to meet you all.”). Week 1 ended in silence over the weekend; RA and GO resolved technology problems (with the Coordinator’s assistance) while DY and PO attended personal events they mentioned to the team.

In week 2, DY reminded the team of the local times and dates for the chat meeting on Friday and asked:

Is everybody happy using the GVT chat utility?
DY YES
RA ?
PO ?
GO ?

All the other members responded by inserting “yes” next to their own name. RA said she would attend, apologized twice for her participation (“Sorry that i

haven't do almost nothing.... I try to do more in future.”), and asked if they planned to complete the personnel selection activity. Members reported their activities to be able to access the chat room (e.g., securing a 24 hour access pass to the university lab) and said they would discuss their plan for the business plan at the chat meeting.

Despite some initial difficulties accessing the chat room, team 2 met for approximately two hours. They discussed the local time of each member, chose to skip the personnel selection exercise because it was not “assessed” (i.e., it was not considered for grading purposes), and agreed to use chat regularly (DY: “we have to at least do it once a week to clear things out”). Although GO needed to leave for work and suggested they continue by email, members insisted that they quickly set the next meeting time (PO: “no, lets set this now.”). However, it took several proposals to find a time for the next chat meeting, and it was not an ideal time for all members (DY: “och!!! that's going to huh me, but i'm tough, i can do it at 4:30AM!!!AAAHHHH!!! consider it DONE!!”). Team 2 showed several signs of affiliation (“brother”, “sis”, “fellows”), and GO sent copies of the directions for all tasks to the team after the meeting.

Episode 2: Preliminary Research

Team 2 began publicly working on the preliminary research on Monday of week 3, after the Coordinator sent a general reminder of the instructions and deadline. GO emailed a file to the team that focused on his business idea and listed a few points about electronic commerce in his home country. GO also proposed – and the others agreed – that DY should serve as “coordinator.” They

did not define this role, and DY expressed some reluctance about accepting it (“Seem as though i got pushed to be the coordinator huh. hmm... see how it goes, we may have to take turns.”). However, DY took several actions that could be considered consistent with such a role. These include:

- Monitoring each member’s task completion. For example, DY wrote on Monday, “GO, I received your preliminary research document. I haven't read it yet, but will soon. Still yet to receive PO's and RA's.” DY included the following in his next message:

GO - I have received your preliminary research.
PO -
RA -

- Stating his intention to complete the preliminary research although he felt he was not required to do so. DY explained, “Just to let u guys know that although the Preliminary Research requires only 3 different countries, I myself will be doing one too. Why? Not only will I learn and benefit from it, but it will prove to my lecturer that I have put in as much effort as u guys.”
- Reminding members of and encouraging others to attend the next chat meeting. After mentioning local times for each person (DY’s time was 4:30 AM), DY said, “ok.. Please do not forget the meeting chat. 4:30AM is a big call, so i expect u guys to make an effort. Our discussion will be on our next task.”

After RA apologized that she could not attend the chat meeting due to another work commitment, DY proposed that they reschedule the meeting so that

three members could chat at more “reasonable” local times (“As you can see, there will only be 3 people involve in the chat meeting. Out of the 3 people, one should briefly update the forth party by email.”). GO proposed a time that would give him easier access to the Internet, and DY encouraged attendance, “I think it is crucial for us not to miss this chat meeting because this is the "starting" point to our business plan. If we can stick to the recommended dates specified above, we should have "no worries" at all.” DY had already mentioned the GVT deadlines for upcoming tasks and proposed a process and target deadlines for these tasks. PO apologized because he thought he missed the meeting while attending a funeral; DY gave his condolences about the funeral.

During this discussion, DY began his message on Wednesday:

PRELIMINARY RESEARCH

GO: I’ve got yours.

PO: I’ve got yours.

RA:

DY: I’ve done mine. If i don't get yours soon RA, i'll have to send mine in.
So we will not be over due.

Also, DY compiled and submitted the preliminary research report after RA explained on Thursday that she could not do her part because she had a “bad flu.” The Coordinator provided some instructions to resolve potential problems with the file sharing area.

Episode 3: Task Plan/ Status Report

On Friday of week 3, DY recognized the completion of the preliminary research and, in the same message, turned attention to the task plan. First, DY complimented the team (“Firstly, I just like to say how effective / efficient we are

as a team. We have been checking / sending emails and mainly communicating at a regular basis. Please keep this up.”). Next, DY informed that he had submitted the preliminary research and posted it on the website; he also encouraged RA to keep a copy of her research to “prove” to her instructor that she had “contributed.” Lastly, DY reminded others of their process (e.g., target completion date for the task plan, upcoming chat meeting, and their “standard guide to the development of a business plan”) and shared his “half completed” task planning exercise, “just to give you an idea.” In his answers, DY listed “Acting coordinator?” as one of his responsibilities and assigned sections of the business plan to each member based on his or her background. He added:

This is just a guide or suggestion as to who will do what. If we are able to accomplish the tasks specified above, it will make our lives easier to complete the business plan. Don't forget, this business plan is based on a team effort and we should share and help each other at all times.

DY's other answers included an early completion goal for the business plan, expectations for member and team communication (send and check messages “as soon as possible;” hold chat meetings “at least once a week”), and reflections about monitoring and his team: “At the end of the day, you are able to tell how much effort one puts in. (at the moment, I am happy the way my team are performing).”

Several events occurred before team 2 continued work on the task plan. First, they rescheduled the chat meeting (because GO could not access the Internet from work) and clarified the local meeting time for each member. GO shared the log for the previous chat meeting and asked for confirmation that others planned to attend the meeting. Second, the Coordinator acknowledged

receipt of their preliminary research, noted that it appeared to be missing a contribution from RA, and encouraged the team to focus on the task plan while the Coordinator contacted RA. Third, GO asked what their topic was for the business plan, and DY clarified that was why they needed to complete the task plan.

Team 2 then worked on the task plan. Both GO and PO provided comments of agreement on the portions of the task plan DY drafted; they expressed satisfaction with the team, too. DY replied:

GO - I have received your Task Planning (but, you still have yet to complete the Business Plan Content).

PO - I have received your Task Planning (but, you still have yet to complete the Business Plan Content).

DY - I'm working on my Business Plan Content now.

RA - Yet to receive yours.

Remember - The section on Business Plan Content under the Task Planning exercise is your own generated idea. Once you yourself have generated that idea, I will post it to our team website in order to choose which one we should focus on. Try to get this done before our chat meeting.

Members, except RA, provided their business plan content ideas before or during the chat meeting the next day. Just after the meeting, DY compiled members' answers into one document and summarized:

GO - "Task Planning" Completed.

PO - "Task Planning" Completed.

DY - "Task Planning" Completed.

RA - yet to receive "Task Planning".

Just before I go to sleep (it's now 12:10am), just to let u know that I've posted the "Task Planning" exercise to our team file sharing area.

GO and DY discussed several issues in the chat meeting. (PO sent a message during the meeting in which he apologized and explained that he missed the meeting because of traffic.) They considered websites and the winning plan from the previous GVT exercise as examples to follow. They decided to use DY's idea for the business plan. They agreed for DY to finish the task plan and status report and GO to update and convince the other members of their topic. Also, they set up another chat meeting, evaluated and complimented GO's use of English, and DY stated as they closed, "don't forget your task and i won't forget mine too."

Just after the meeting on Tuesday of week 4, DY reminded of the status report deadline for Friday, said he would circulate the report for comments before he submitted it, and commented, "Once the "Status Report" is handed in, we all can start our business plan (yeehaah!!)." PO apologized again for missing the meeting and inquired about RA ("Let me ask you something, what is going on with RA? Is she still a part of the team?"). GO attached a file with the chat meeting log, reported the topic they selected and asked others if they agreed, and said, "PO, RA had Flu or cold, we don't know nothing about her, DY and I supposed, she didn't read the messages." PO replied to GO's message, "As always, i agree with you, my friend.... I'm happy to be working with people who take things seriously. We'll kick ass on this business plan."

DY circulated a draft of the status report, which he noted was suggested in the task instructions. The report condensed and made minor revisions to the content of the task plan. DY wrote in the issues section, "Till now. There are no

problems. We are a little concern / worried about RA. The last time we heard from her was [six days ago]. We all know that she has the flu, but since then we have not heard from her.” PO and GO expressed agreement with the status report (PO: “we should do it for real :o) ”) and affiliation for each other (PO: “my friend”), and they discussed some websites and other ways to develop “DY’s good idea.” GO again complimented their communication, asked for confirmation for their next chat meeting, and address RA, “RA, How are you feeling? Are you still sick? Please we need to know about you, if you could send to us an email.” The Coordinator provided some clarifications about task instructions and reminded of the status report deadline for Friday.

Episode 4: Business Plan Early

Unlike previous or subsequent events, team 2 experienced more difficulties in episode 4. On the whole, efforts to influence the direction of the team or the actions of members were met with a delayed or lacking response.

On Thursday of week 4, DY recognized the completion of the status report and, in the same message, turned attention to the business plan. First, DY complimented the team (“We have come this far and accomplished so much. What's more important is that we are up to date!! Less keep this up and give ourself a pad on the back.”). DY informed that he had submitted the status report and posted it on the website. He then continued with “4 points”:

- Chat meeting this coming (tue) 28/03/2000
- Let's all use "Microsoft Word" (.doc) to make life easier.
- Let's start on our Business Plan and kick some arse!!
- The Business Plan has to be 6-8 pages in length (anymore, points will be deducted). If you have to write more, this is where the Appendix comes in

handy (Please refer to "Darrah", last years winner business plan - have a look at their format if you are not sure and also to get some ideas; if u have not got "Darrah", please see GO).

RA apologized and explained that she had been in the hospital, was “still out off order,” and said, “I wish best for you.” The Coordinator congratulated team 2 on submitting the task planning summary and status report and informed that he “sent a message to check on RA.” On Monday, the Coordinator reminded all teams about the deadline and the possibility of bonus or penalty points based on the timing of the business plan submission. The Coordinator also reported that RA had withdrawn from the team due to her illness.

After four days of public silence by members, team 2 began communicating again on Tuesday of week 5, the day of their scheduled chat meeting. Responding to the “news about RA,” DY reassigned RA’s subtasks to GO and DY, saying they should “help” each other if they encountered problems on the separate subtasks. DY ended his message:

I will "not" be able to attend for today's (tue) chat meeting. Please keep me inform of what's happening. GO, please copy the meetings and let me know our next chat meeting. I'm still checking my emails everyday so feel free to communicate regularly. Thanks.

After waiting in the chat room, GO apologized to PO through the listserve, explaining personal reasons why he could not wait any longer for PO to arrive. Blaming a work emergency, PO apologized to GO for missing the meeting and continued, “I'm been a very bad team mate, promisse I'll make it up tp you guys in this business plan. Please, send me notification of the next chat meeting and i'll be there. sorry again and I'll wait for the news.”

Responding to the mid-exercise survey, members made the following comments on Wednesday of week 5:

I'm glad to participate with my team, we are doing a good job, but unfortunately we lost a teammate because she is very sick, she have a flu and then she gave up for this reason but we are working more and we will try to finish soon. (GO)

i believe this exercise is very important and challenging, but unfortunately we had a member that didn't thought so, or she got sick, I don't know, but I'm concern about the grade, since we have a member absent. (PO)

Through the listserve, GO shared some articles he found related to the marketing plan, proposed a new chat time that would hopefully address previous issues with members' schedules and technology access, and expressed "waiting" for "proposals and comments" about both. GO ended his message:

On the other hand we need to work more because we don't have a temamate, I will do my best effort because the next week i will have [an audit at work], this week I'm preparing my files and documents [for the audit] this is my reason that I have not finished to read yet [the attached articles] and i hope this friday I [will finish them] We need to do it and we will develop this bussines but real after finished it. o.k.

PO replied to GO, "Don't worry about this plan.... this is kinda easy. We'll do just fine." DY also encouraged that they keep the plan "simple" and look at the winning plan from the previous exercise. Both DY and PO agreed with GO's new chat time (PO: "You are the man !!! This new chat time is perfect for me."), and DY asked for clarification about which day. In addition to repeating his request for comments on the articles he sent, GO replied to DY, "I need to know what days are available for you, I'm waiting for yours proposal, we could start the next sunday and you the monday, what are you think? or if you want to do today, I can, PO perhaps he can." PO, without responding to GO's proposal, showed up

for the chat meeting on Sunday and then posted a bulletin board message asking, “where were you guys?” GO later explained that he did not attend because no one had responded when he checked his email messages the night before.

On Monday of week 6 – the day after this incident and following three days of silence by DY – DY proposed a meeting for later that day and apologized to GO for the “slight delay” in replying to GO’s message. DY also commented that the files GO sent were “excellent.” DY was the only member that logged in for the meeting. Also, the Coordinator made some general comments to all teams about the status reports.

Episode 5: Business Plan Late

Team 2 began diagnosing why the chat meeting failed and took actions to prevent misunderstandings as they scheduled the next meeting. Immediately after the last unsuccessful meeting, DY commented that it was “obvious you guys didn't get my e-mail on time 'cause i've waited for an hour from 9:00pm to 10:00pm at our team GVT chat site on mon 3/04/2000.” DY then proposed a meeting for the following week to avoid “any confusion at the last minute.” GO replied:

It's Obvious, we didn't understand what day was our chat meeting, my proposal was yesterday at 9.00 pm from me but i was waiting for your confirmation and i didn't receive any email from you for this reason yesterday I wasn't able at the net but I checked my email at 10.00 pm but I didn't receive nothing.”

GO proposed a new time for the meeting and asked for confirmation. The other members agreed to the time, and GO summarized the local time and date for each member. DY then corrected an error for his local meeting time, but GO

interpreted it as a new time for all members. GO asked others to note their agreement using the format they had been using for voting, and PO did so. DY then clarified that the local time had been miscalculated; GO agreed and explained the calculation of the local times to show the new times were correct. DY noted their agreement (“Excellent!! We have finally got the time and date sorted out for our chat meeting.”) and completed the voting:

DY 11.00 am (Tuesday) I Agree
PO 12.00 am (Tuesday) PO is Agree
GO 9.00 Pm (monday I’m agree

Early in this discussion, members encouraged use of email in the interim and affirmed that they would be available through email.

On Thursday and Friday of week 6, team 2 briefly discussed and prepared for the business plan. The Coordinator reminded all teams that they were “just two weeks away from the official deadline,” encouraged them to consider doing the task planning update, and repeated the business plan evaluation criteria. DY shared a website as an example of a competitor, adding, “One of our aim towards our business plan is to Keep It Short and Simple (K.I.S.S.).” PO requested a copy of the winning plan from the previous year, and DY told him to get it from GO. DY added:

Just to remind u guys that we had set our draft for our business plan to be completed by 5th April, it is now the 7th April. Obviously we had passed our due date. We should try and get the draft done by our next meeting chat which is on the 11th April.

Don't forget, handing our Business Plan early gets us bonus marks.

Also, DY provided two articles for them to “get some ideas,” and DY again commented that their business plan should be “simple,” not “detailed” like the files GO provided about marketing.

Team 2 had their third chat meeting on Monday of week 7; DY took an active role in directing and initiating the topics of conversation. DY asked both PO and GO to summarize their subtask work in one or two paragraphs for the executive summary. DY added, “if we can do all these by Friday... that would be excellent!” Later, DY reminded both PO and GO individually about the paragraphs (“don’t forget...”) and mentioned the deadline again (“please get all these done by Friday”). Members also complimented the team:

DY: ok.. i think we have done well for our group. especially 3 of us.

PO: me too

DY: hopefully we get some credit for tackling a business plan with only 3

GO: perhaps

DY: anyway, don’t u think we are bloody effective with our communication. we only needed 30 minutes to get our message across.

As PO was leaving, they exchanged:

DY: “PO - good night and don’t forget friday.”

DY: “PO - keep in touch through the email. cause we have done well as a team.”

PO: “I wont ...”

PO: “I’ll keep in touch.”

DY then asked GO a question about GO’s subtask, but GO, as he later apologized through the listserve, experienced technical problems with the chat room that prevented his reply. DY ended, “i will hear from u this friday and all the best.”

Team 2 worked on the business plan for the next week. Just after the chat meeting on Monday, DY shared a draft of his plan sections and wrote, “Please

read and try to ‘gel’ towards the business description.” On Tuesday, the Coordinator provided several clarifications and instructions to all teams about the business plan. GO apologized again about the chat meeting, briefly answered DY’s ending question from the meeting, provided his assigned plan sections, and invited discussion of any “doubts” about his draft. The next day, GO offered some clarifications about his work and repeated his request that they contact him with any comments. On Thursday, DY sent an updated plan (“...just to let u guys have a look at what I have done so far...”) and monitored member work:

I'll do the executive summary last.

PO - Yet to receive you financial side.

GO - Where's the contract award, establish with each employee? I think u forgot to attach the file to us.

The Coordinator reminded them of the submission requirements and that the plan was due the next day for maximum bonus points. PO asked some specific financial questions related to his subtask (“Hope to hear from you guys (SOON).”), and DY replied twice the next day with specific answers and encouraged him to make some assumptions. PO then sent his assigned subtask. On Sunday, DY said he would “put everything together” by Monday and “try to gel our work;” DY ended, “Wish me luck.” Both GO and PO did so (GO: “i wish good luck for our team”; PO: “GOOD LUCK TO US , SCREENPLAN KICKS ASS.”). DY submitted the final report on Monday of week 8 (“I hope the Business Plan had ‘gel’ nicely.”), earning the team bonus points for being two days early. The Coordinator congratulated the team for submitting their report.

Team 2 expressed general satisfaction with the team:

It has been a pleasure working with u guys. I have your e-mails account, so make sure we keep in touch. cheers!! [DY, last message]

Our team member RA was sick, thus she had to withdraw from our team. Overall, I was pleased with our team members. Although we had to tackle the Business Plan with 3 members, we had done well as a team. Lastly, this was a very interesting and challenging unit, and I enjoyed it. Thanks. [DY, exit survey]

We put our best effort to do our bussines plan, I'm happy because my team were terific. [GO, exit survey]

...I wnat to give you the thanks for everything i enjoyed the business plan a lot, my team were terrific(excelent) and i proud of my team because each member put their great effort to finish the bussines plan before my [vacation], thaks again and recieve a saludate. [GO's mail to Coordinator]

Having described each of team 2's episodes, the next section analyzes team 2 processes involved in control enactment.

4.2.3. Analysis of Team 2 Processes

This section explains how control was enacted in team 2 by discussing team control processes, team monitoring processes, contributing internal team processes, and contributing external processes and structures. Team control processes featured pressuring that reinforced commitment to the team and attendance at chat meetings. Team monitoring processes included reminders about team deadlines and meetings as well active monitoring of output expected from members. Team processes that contributed to control and monitoring included technology appropriation (e.g., chat meetings), coordination (e.g., significant effort to schedule chat meetings), and production (e.g., JN received output from members and assembled the final product). External processes and structures, such as GVT task instructions, also had a small impact on control and

monitoring in team 2. By examining processes both internal and external to the team, this analysis reveals processes and structures that contributed to control enactment. In addition to the textual analysis below, Table 4.4 summarizes changes in processes across episodes (see the introduction to this chapter for more information about the table.)

Team Control Processes

DY was the primary initiator of control-related communication, and other members' communication reinforced control in the team. Members of team 2 expressed and demonstrated high levels of commitment, and they formed and maintained an expectation that each member should make a strong personal commitment to the team. This team value held that members “make an effort” and endure “suffering” for the good of the team.

Events in episode 1 that contributed to the initial formation of the team's value for personal commitment and participation included:

- Members expressed urgency and enthusiasm for the project. GO said he wanted to start “soon” and “now” on the project. PO claimed, “I'm very motivated with this.”
- DY asked for “effort” in his initial message: “Over the next eight weeks, I would assume that there would be obstacles such as assignments, presentations or other non-related uni work that will get in our way. Hopefully we can overcome these situations and *make an effort* to tackle these problems [emphasis added].”

- Members discussed and agreed upon an aggressive target deadline for completing the business plan. DY noted, “I’m keen in getting this Business Plan out the way A.S.A.P. *If we work hard*, I believe we can knock it off at least 1st week of April [emphasis added].”

Furthermore, as seen in the incidents below, the team’s call for synchronous communication among all members combined with extreme time zone differences created a scenario where personal commitment was required of all members – some needing to make greater sacrifices than others.

- DY attended the first chat meeting at an undesirable local time. Before the meeting, he reminded others of this sacrifice and encouraged attendance: “Let’s make an effort to our first meeting chat (I’m relying heavily on my loud alarm clock to wake me up at 5:30am!). Looks like plenty of coffee for u RA. Please let us know if any of u can’t make it to OUR FIRST MEETING CHAT. ‘Cause it would be very difficult if i was the only one there, especially early in the morning.” PO replied: “I’m sad about you, DY, that will have to wake up [so] early in the morning, but is *part of the deal* [emphasis added].”
- DY made favorable comments about “suffering,” some with humor, as they attempted to schedule their second chat meeting. DY reacted to PO’s proposal: “PO - if we do later.. RA will be too early in the morning. but i guess RA, *we have to take turns with our suffering*, ‘cause we r a team. hehe.. [emphasis added]” When they proposed a

less favorable local time for DY, DY still agreed: “och!!! that's going to huh [hurt] me, but i'm tough, i can do it at 4:30AM!!!AAAHHHH!!! consider it DONE!!”

In episode 2, team 2 continued to encourage participation, although they redefined their expectations for the chat meetings. DY reminded about and encouraged attendance at the next chat meeting (“i expect u guys to make an effort”), particularly because his local meeting time was scheduled for 4:30 AM. After RA said she could not attend, DY proposed that they schedule the meeting for three members at a more "reasonable" time. DY later explained that it was "crucial" that they not miss the rescheduled meeting. As the deadline for the preliminary research approached, DY reminded RA that he would submit the preliminary research without her part if he did not receive it "soon." Team 2 also set an interim deadline for completion of the task plan.

In episode 3, team 2 reinforced their values while considering their norms in a slightly more explicit way. Noting the regularity and effectiveness of prior communication, DY commended their effort and encouraged them to continue ("please keep this up"). While discussing subtask assignments in the task plan, DY reminded that they were engaged in a team effort (“this business plan is based on a team effort and we should share and help each other at all times.”). They agreed to send and check e-mail messages "as soon as possible." As the active members discussed RA's absence, they remained confident about their commitment to the task (PO: “I'm happy to be working with people who take things seriously.... We'll kick ass on this business plan.”). Team 2 asked RA to

let them know about her (GO: “Please we need to know about you, if you could send to us an email.”) and reported her to the Coordinator in the status report. Team 2 also established a target date for the completion of the business plan draft.

In episode 4, team 2 continued to reinforce their commitment and adjusted to RA’s official withdrawal from the team. DY again encouraged that they keep up their effective communication, and called attention to the business plan (“Let’s start ... and kick some arse!!”). DY suggested they “help” each other if they ran into problems picking up RA’s part. GO also reinforced the need for additional effort (“need to work more because we don’t have a teammate”). In episode 5, team 2 established new deadlines to replace the original goals that they missed. In their final chat meeting, DY requested and reminded the others several times to provide him with their work by Friday, which they agreed to do and did. When DY told the others that he was starting to finalize the business plan, he ended his message, “Wish me luck.” GO replied that he “receive yours email today and i wish good luck for our team.” PO added his thoughts about their plan, “GOOD LUCK TO US, SCREENPLAN KICKS ASS” [emphasis in original].

Team Monitoring Processes

Monitoring in team 2 was a persistent activity throughout the project. DY, as the “coordinator,” was especially active in the monitoring process, but all members participated. Monitoring focused primarily on team communication and task deliverables; two examples from episode 1 show the beginnings of these foci. First, early messages clarified the identity of team members and expressed

“waiting” for communication, particularly for the last teammate to contact the team. GO wrote:

DY >>>>>> from Country A
PO >>>>>>>>>> From Country B
GO >>>>>>>>> From Country C
We are 3 persons at the team, i waiting for the next person...

DY then celebrated RA’s first communication to the team (“We have a team!!”). Second, even before the task instructions were made available, team 2 recognized the need to make decisions on the business plan (e.g., GO welcomed RA to the team and explained that they were “... in the process to define the project that would do....”). The following paragraphs examine how team 2 monitored the team as a whole as well as specific members.

In monitoring the team, team 2 demonstrated interest in team communication and task deliverables in several ways. First, team 2 provided one or more reminders before each of its scheduled chat meetings. These were usually sent by DY and included each member’s local time and date to avoid confusion over time zone differences. (Incidentally, team 2 experienced several problems in episode 4 when it varied from this process, so members attempted to diagnose the problem at the beginning of episode 5.) Second, team 2 provided reminders of approaching deadlines (DY in episode 2: “Just to remind you guys, our next task is due next Wednesday.”) and missed deadlines (DY in episode 5: “Just to remind u guys that we had set our draft for our business plan to be completed by 5th April, it is now the 7th April. Obviously we had passed our due date....”). Third, team 2 recognized the completion of deliverables as they occurred and complimented the team. In episodes 3-5, DY informed that the

deliverable had been submitted and complimented the team's work and communication. For example, DY began episode 4: "We have come this far and accomplished so much. What's more important is that we are up to date!! Less keep this up and give ourself a pad on the back." Finally, members reminded each other of the grading criteria, and they monitored the output of members as discussed below.

Team 2 monitored member output and behavior; this paragraph examines monitoring specifically of member communication and task output. First, DY reported the status of each member's work by noting the task output received (or not received). For example, one message in episode 2 began as follows:

PRELIMINARY RESEARCH

GO: I've got yours.

PO: I've got yours.

RA:

DY: I've done mine. If i don't get yours soon RA, i'll have to send mine in. So we will not be over due.

This action of noting the status of task output occurred several times in episodes 2, 3, and 5 as the team prepared their required deliverables. This monitoring usually mentioned all members, similar to the format above, and the evaluation was relatively superficial in that it did not assess the quality of any work received. Second, a related form of task output monitoring involved the author informing other members of output he or she had shared or submitted. For example, DY sent a message to the team each time he submitted the required deliverables to the Coordinator and posted them on their website. Third, members attempted to monitor by noting communication (or the lack thereof). In episode 3, team 2 became increasingly concerned about RA because of her lack of communication.

In episode 4, GO did not attend the chat session he proposed because other members did not respond to his proposal. A final form of output monitoring occurred when members “waited” for specific communication from one or more members; that is, they explicitly revealed that they were waiting or watching for certain information. This happened in episode 1 as members “waited” for RA to contact the team and again in episodes 4 and 5 as members revealed task related information that they were waiting to receive. The expression of “waiting” in several of these messages added salience to the original request for information that were sometimes in the same message.

Team 2 also monitored the behavior and conditions of its members in several ways. First, members provided updates about their own behavior or conditions, providing information that in most cases was not otherwise available to teammates (e.g., off-line actions taken on the project; times when a member could access email; busy periods at school or work). These updates – which were either self-initiated, prompted by unplanned events (e.g., unexpectedly missing a meeting), or explicitly requested by teammates – became a persistent feature of monitoring across episodes. Second, a related but less frequent form of monitoring was the act of repeating information previously shared by members. For example, within the first few days, members noted dates when they would be unavailable; DY then repeated this information as “Important Absentees times” and reminded just before the time that he and another member would both be absent. Next, team 2 inquired about behaviors or conditions. This occurred after a delay in providing expected output (DY to GO in episode 1: “What about your

Spanish plan that u were going to translate it to English??”) or communication (PO in episode 3: “...what is going on with RA? Is she still a part of the team?”). This latter example precipitated a brief discussion of RA’s whereabouts and another inquiry (GO to RA: “How are you feeling? Are you still sick?”). Finally, members on a few occasions self-evaluated their behavior. RA did so twice in week 2 (“Sorry that i haven\’t do almoust nothing...”), and PO remarked in episode 4 (“I’m been a very bad team mate...”). These negative self-evaluations were rare, but revealed that the member knew their behavior was not meeting their own expectations, at a minimum.

Finally, two additional comments are needed. First, at least 20 times over the project, team 2 used a format of listing members and status information as a way to show who needed to comment, respond or contribute. This can be seen above in the example for noting task output received. It was also used as a means to inquire or vote, as seen below:

Is everybody happy using the GVT chat utility?
DY YES
RA ?
PO ?
GO ?

This format appeared to increase the salience of the participation desired, but may have been less confrontational than a request or inquiry directed at only one member. Second, it is noteworthy that there was minimal monitoring of the actual content of the business plan in the latter stages of developing this deliverable. This may be related the coordination and production tactics discussed subsequently.

Contributing Internal Team Processes

This section considers internal team processes of technology appropriation, coordination, and production. These processes directly impact control enactment by specifying which behaviors are monitored and controlled. These processes also indirectly shape control enactment by influencing the context in which control and monitoring occur among team members.

Technology Appropriation – Team 2 communicated regularly and actively through the listserve (sending 125 messages), but they primarily emphasized the need for and pursued weekly chat meetings:

- “As a group, we probably find that the chat meeting was much more effective / efficient than emailing. This is because we get direct response from the chat meeting.” [DY in episode 1]
- “At least once a week we should engage in a chat meeting via the GVT chat site. Time / dates will be notified.” [task plan in episode 3]
- “anyway, don’t u think we are bloody effective with our communication. we only needed 30 minutes to get our message across.” [DY commenting on the chat meeting in episode 5]

They held 3 chat meetings out of 5 actual attempts, focusing on when to hold chat meetings, what topic to pursue for the business plan, and coordinating responsibilities for the business plan in the three meetings, respectively. Team 2 used the listserve primarily to transfer files, monitor progress, and arrange these chat meetings (e.g., calculating time differences, arranging schedules). Documents exchanged through the listserve provided examples or guides to

follow and finished drafts of member contributions. The file sharing area was simply used as a final archive. All communication was publicly available to all members.

Coordination – Key aspects of coordination in team 2 included selecting DY as the “coordinator” for the team, scheduling chat meetings, defining processes and guides to follow for the business plan, and managing immediate tasks on a day-to-day basis. The following paragraphs discuss each feature briefly.

As explained in the description of episode 2, team 2 “pushed” DY to be their “coordinator.” DY suggested that they might rotate the role and listed himself as “acting coordinator?” in the task plan (episode 3); nevertheless, DY took primary responsibility for coordinating, monitoring, and finalizing each of the work products. GO helped with some of the coordination activities before DY was named coordinator and assisted on a few occasions afterward.

Team 2’s strong commitment to synchronous chat meetings precipitated a large investment in communication to organize chat meetings, with at least half of their listserve messages contributing to this effort. In episode 1, members arranged internet access to be able to attend the meetings (e.g., 24 hour lab pass), and each voted to use the GVT chat tool, as noted in the monitoring example above. The organization of each chat meeting involved one or more proposals to find a time that fit members schedules, calculation (and often recalculation) of the local meeting time based on each member’s time zone, and a response from each

member about their intent to attend the meeting. This process often used the format below and was followed closely after chat failures in episode 4:

DY 11.00 am (Tuesday) I Agree
PO 12.00 am (Tuesday) PO is Agree
GO 9.00 Pm (monday I'm agree

Team 2 also focused on defining its business plan project. Early in episode 1, GO explained that they were "... in the process to define the project that would do...." Beyond needing to decide on a topic, this process involved agreeing on a deadline for completing the business plan (as mentioned above) and proposing guides that they could follow to develop the plan (e.g., GVT business plan template, winning plan from the 1999 GVT Exercise, an article on writing a business plan). In episode 3, DY proposed subtask assignments for business plan sections from the "standard guide" he selected, and these were accepted by the team. They also added a deadline for drafting the plan. Team 2 continued to discuss and refine their guides and processes for the business plan in later episodes as discussed below.

The final aspect of coordination involved managing the completion of the smaller tasks. Team 2 assumed the subtask structure of the preliminary research (i.e., each member researched their home country), so DY simply monitored and compiled the output. For the task plan, DY proposed a completion process which included a deadline for commenting on the task plan, a chat meeting, and a guide to follow. DY then monitored completion and subsequently adapted the process to fit the timing of their next chat meeting. Drawing from the GVT instructions, DY also drafted and allowed the others to comment on the status report. Finally,

these activities continued for the business plan in episodes 4 and 5. DY reassigned RA's work after she withdrew, assigned additional subtasks that he identified, and created new deadlines after their original deadline passed.

Production – Production in team 2 involved the public discussion of ideas followed by the private completion of subtasks and finalization by DY, as the “coordinator.” In episode 1, GO and DY discussed which guides and examples they should follow and topics they could pursue. In episode 2, all members except RA prepared the preliminary research privately, and DY compiled the contributions in one document for the Coordinator. In episode 3, DY partially drafted the task planning (“just to give u an idea”), which the other active members edited, then they all suggested an idea for the business plan. GO and DY selected “DY’s idea” in a chat meeting, and DY compiled responses to the task plan. DY drafted the status report, which the other active members approved. In episode 4, GO provided some articles to help with his own subtask, while the other members cautioned to keep the plan “simple.” In episode 5, DY drafted the initial sections of the plan, asking the other members to “try to ‘gel’ towards the business description.” GO privately drafted and then shared his section for comments; PO asked for and received input before submitting his work. DY revised their individual contributions (“put everything together and try to gel our work”), and submitted the plan to the Coordinator.

Contributing External Processes and Structures

External processes were relevant to control in team 2, although team 2 rarely made external control structures or monitoring a primary focus of attention.

Before the Coordinator made the task instructions available, team 2 had already begun the process of defining its business plan approach. Task instructions became more relevant to the processes used for the preliminary research and status report, but team 2 was not highly dependent on these instructions for the processes it employed. Similarly, team 2 was aware of and was reminded about control structures (e.g., deadlines, grading criteria, peer evaluations, ability to terminate members), but team choices (e.g., team-set deadlines) were driven more by preferences of team members. The Coordinator did monitor the completion of each task and noted that RA did not contribute to the preliminary research. The team also reported RA in the status report; the Coordinator inquired about RA and then reported that she withdrew from the team.

Having introduced, described, and analyzed team 2, the next section examines team 3.

4.3. TEAM 3

This section explains how control was enacted in team 3 by introducing the team, describing team episodes, and analyzing team processes.

4.3.1. Introduction to Team 3

This section begins with a brief introduction to the team and its members. Team 2 had four members who were located in Australia, Brazil, Finland, and Mexico (with minimum and maximum time zone differences of 3 and 13 hours, respectively). They completed both the preliminary research and status report on time and submitted the business plan three days before the official deadline.

Team 3's business plan proposed: "Tequila Traders: The easiest and most cost effective way to trade tequila on the Internet."

Team 3 comprised DE, JN, DL, and EO. DE was the most active and consistent member of the team; she initiated much of the coordination and pressuring and contributed the idea for the business plan. While slightly less active than DE in the early stages, JN collaborated extensively with DE during the business plan task. DL made small contributions in the early tasks, but become the subject of repeated discussion during later stages to decide if he should be kept on the team. EO joined the team late, only responded to direct requests from other members, made a small contribution to the preliminary research, and withdrew from the team during the fifth week of the project.

Members of team 3 reported one of the largest increases in perceived levels of control from the middle to the end of the GVT project. JN explained his response in the exit survey:

I have evaluated my team based on the two members that participated not those that didn't or the overall (average) performance.

I would hope that [having only two active members instead of four] is taken into account when being graded.

I'm sure you will find that the communication expected varied greatly from the first survey to this one. As the end neared, we found the communication increased even more.

Furthermore, DE wrote in the exit survey:

I have to confess that practically our team, after the Preliminary Research was formed by JN and me. JN has been a BRILLIANT teammate and friend, and shown an excellent participation during the whole project, most of all when we saw that there was lack of participation of the other

members, and when we realized that our team was practically formed by only we both.

EO showed very-very poor participation and communication (until the day he left our team).

DL showed fair participation at the beginning of the project, but (unfortunately) poor effort, communication and participation after the Preliminary Research (which was the hardest part of the project).

Most of team 3's control-related events focused on member participation and team membership, as discussed in the paragraphs below.

Team 3 monitored member participation primarily by focusing on communication behaviors. For example, DE noted to JN: "I'm a little mad at [DL and EO], they don't participate as they should." Team 3 attempted to control participation in at least two ways. First, active members noted when a member had not communicated with the team and reported the issue to the Coordinator:

- DE and JN noted EO's lack of communication during the beginning weeks and reported this issue twice to the Coordinator, who contacted EO. EO contacted the team shortly thereafter.
- DE and JN noted "participation problems" in the status report without mentioning specific names. The Coordinator inquired about the problem to the entire team, and DE provided more specifics on EO's silence and DL's irregular communication.
- DE and JN reported DL's silence and lack of participation again in the last episode. The Coordinator contacted DL, who apologized for his communication; however, DL did not participate more actively.

Second, beginning with the task planning activity, team 3 shifted toward production processes that emphasized team discussion via synchronous chat; active members scheduled, motivated, and attempted to pressure attendance at these meetings. Motivational attempts first emphasized “sacrifice” for the team and became increasingly direct toward non-participating members. EO actually withdrew from the team 7 minutes after one such incident of pressure. This strong chat norm apparently defined the participation status of each member. As meetings increased in frequency and duration in the final episode, members had to be constantly available, due to the short scheduling lead times, and make personal sacrifices (e.g., staying up until 4:30 A.M.) to participate.

The second area of control related to team membership (i.e., who is considered part of the team). By the end of episode 5, DE and JN were working closely on the task and had made several unsuccessful attempts to achieve greater participation from EO and DL. While they continued to report DL to the Coordinator (and EO had already withdrawn), their emphasis appears to have changed from seeking DL’s help to desiring additional credit for having only two active members (“have this taken into account for grading purposes”). DE admitted to JN that “being just 2 people like us is better for us, i think... :)” ;” JN agreed but remarked that “having a third to input other ideas would be helpful.” On several occasions, they considered whether or not to fire DL from the team and even asked the Coordinator about the policy for removing team members. Ultimately, they decided to list DL as a team member because JN did not want to hurt DL’s grade (not because they recognized any contribution to the business

plan). It appears that one way they increased perceived levels of control was to redefine team membership as the active core members. The large amount of time they invested in synchronous chat meetings where they jointly collaborated and engaged in social communication may have reinforced this perception.

The next section describes each of team 3's episodes.

4.3.2. Description of Team 3 Episodes

This section describes each of team 3's six episodes. In the first week, all members except EO sent messages for the greeting exercise, and DE encouraged use of chat during the project (episode 1). In week 2, DE and JN completed the personnel selection and waited for EO and DL to join the group; they knew DL was on a trip, but they received help from the Coordinator to contact EO (episode 2). After completing the preliminary research in week 3 (episode 3), team 3 made a more concerted effort in week 4 to use chat for the task plan and status report (episode 4). DE and JN made several attempts to get EO and DL to participate in meetings on the business plan; EO withdrew from the team shortly after a message from DE pressuring for attendance (episode 5). DE and JN continued and significantly increased their use of chat meetings in the last two weeks, eventually completing the business plan without DL's assistance (episode 6). In addition to the textual description of each episode below, Table 4.5 summarizes this case using columns for episodes and rows for processes, structures, and outcomes (see the introduction to this chapter for more information about the table).

Episode 1: Greeting

Responding to the greeting activity instructions, team 3 members made personal introductions and engaged in a limited social exchange through the listserve during the first week. On Monday, JN wrote after describing his background and interests:

From this project I hope to get an understanding of dealing with and co-ordinating group work through proper communicatin protocols and standards...

....My aim is to be available all the time and to respond within 48 hours of emails sent to me. Some days I'm not in so I've given myself a 2 day buffer.

I look forward to hearing from you.

DE introduced herself very briefly and noted who had sent messages to the team. DE said she could not answer the greeting questions until tomorrow because she had homework and explained, "Meanwhile I'm sending you all this mail to affirmate I care about our team, really." DE ended, "I know we'll be a good team (and good friends, too). I really hope so. Bye!! DE :)", and the postscript asked about their use of ICQ ("I think it's going to help us a lot."). On Tuesday, JN sent a picture of himself and complimented DE's language skills, in response to her request for patience with her English. When providing her greeting answers, DE repeated her preference for meetings using the ICQ chat tool ("it's REALLY FASTER than e-mail") and asked others to "PLEASE" send their ICQ numbers. DL provided "just a small brief about me" on Wednesday because he was "very busy right now." EO did not contact the team during the first week.

A few other events occurred later in the first week. DL explained in his message on Wednesday and then reminded on Friday that he would be on vacation until the third week of the project. The Coordinator provided access to the team website and made the task instructions available. After looking at the website, JN sent the list of team members to the listserve on Friday, and DE proposed on the bulletin board that they begin looking at business plans to prepare for the project.

Episode 2: Personnel Selection/ Missing Members

On Friday of the first week, DE warned: “WAIT!!!!!!!!!!!! ... hey!!! I didn’t realize we have homework for tomorrow....” DE proposed a process similar to the one suggested in the personnel selection task instructions, including posting comments to the bulletin board and holding a chat meeting on Saturday. The message included local meeting times for each member except DL (“DL went [on vacation], remember?)) and listed a website that provided information on time zone differences. DE invited differences of opinion or suggestions about the process. DE posted her personnel selection rankings on the bulletin board after no other members showed up for the chat meeting. On Monday, JN thanked DE for the “wakeup,” gave his response to the personnel selection, and asked DE to revise and submit the memo since “we won’t hear from DL, and still haven’t heard from EO.” JN apologized about the chat meeting, explaining that he did not have a computer at home and would not typically receive messages sent on the weekend until he returned to his university on Tuesday. JN suggested that DE send any messages by Thursday night, adding: “I will change [my regular

schedule] if need be, we need to set some sort of schedule that's all." DE integrated their individual versions and submitted the report.

Responding to the Coordinator's request that they report any members who had not contacted the team, DE asked the Coordinator if EO "is still on our team, because we haven't received any information from him." Three days later, JN, after direct communication with DE, repeated the request to the Coordinator and through the listserve about EO; JN expressed concern about and asked how to proceed with just two active members. The Coordinator contacted EO by direct email on Friday, who responded on Saturday that it would have been "very difficult to participate before now" because he had been traveling. EO sent his greeting message to the team on Sunday.

Episode 3: Preliminary Research

Team 3 began working on the preliminary research in week 3. On Monday, the Coordinator clarified task and technology instructions and reminded of the preliminary research deadline on Friday. DE welcomed EO and encouraged him to review the task instructions and upload his preliminary research to the file sharing "as soon as possible." DL apologized for his vacation absence and noted his plan to share his research by Wednesday. JN replied: "Pictures DL! Pictures!!!!"

Members of team 3 worked individually on their research until it was time to submit the report. In a direct email message, DE updated JN on her work and asked JN to coordinate the submission of the preliminary research, due to his proficiency in English. JN requested that each member submit the research to

him before Friday, and he acknowledge receipt of each report when he received it. JN inquired about the format for the report, and the Coordinator clarified the issue. When he shared and requested comments about the draft on Friday morning, JN congratulated and thanked everyone for their work and expressed hope that no one would take offense that he reformatted and expanded some members' sections (EO's, in particular). DE thanked JN for his work and reassured that "nobody should be bothered" about his editing. JN submitted the report later on Friday.

Episode 4: Task Plan/ Status Report

That same day, DE warned about the task plan deadline for Wednesday and asked about possible chat times "because the next tasks has a lot to do with discussions." JN said when he would usually be available and asked that they schedule the meetings with "a couple days notice so I can rearrange other stuff." On Saturday, DE proposed and attempted to motivate attendance for a Sunday chat meeting:

I think some of us will need to make a sacrifice (hahaha) and wake up early in the morning, so we can make a discussion team.

I think If one of us can't join the rest (for any reason), the rest shouldn't stop working for that, ok?

I propose this schedule:
[date and Greenwich Mean Time for each member's country]

It's just a proposal, I'll be online in the chat room (of our site) anyway, I hope most of you can join us. I know it's hard and pretty soon to star to work, but we could do our best, couldn't we?

Please, everybody let's make a little sacrifice for everyone, OK?
Bye! DE :)

This interest in synchronous team discussion was complicated by time zone differences, computer access issues (both DE and JN said they did not have a computer at home), other commitments (DE could chat on Monday but not Tuesday), and inadequate notice or scheduling. For example, this Sunday chat attempt failed; other members explained that they received the listserve message after the proposed meeting time. On Saturday, the Coordinator noted that each member had contributed to the preliminary research and stressed the importance of completing the task planning activity in preparation for the status report that would be due on Friday.

Members of team 3 collaborated on the task plan over the next four days. After a Monday chat meeting where DE and DL discussed the process for doing the task plan, DL shared the chat log and requested topic ideas from the team (“Our main objective is to specify what will the business do and we don’t have so much time.”), then DE shared her idea (her faculty sponsor required preparation of an idea before the GVT Exercise began) and encouraged the team to work on the task (“PLEASE coordinate with DL to get a big advance of this, because tomorrow I won’t be online. Bye! And as DL said, good luck to us.”). JN apologized for missing the meeting and shared his idea. After DL proposed a Wednesday meeting to choose the topic (“Chatting is the only way we can decide this.”), DE and DL met again in the chat room (with almost half devoted to social conversation) and selected DE’s topic for the business plan over JN’s idea. JN again apologized for his absence (“I really need 3 days [notice] if I can get it....”), but he complimented the idea and explained how it could be improved. DE

informed the others that she posted the task planning summary to the file sharing area and invited feedback and changes.

On Thursday and Friday, team 3 prepared the status report. With lead times of less than a day, JN scheduled and held chat meetings with DE each day where they further developed the content for the status report. During this time, they discussed some of the task requirements and asked for and received clarification from the Coordinator about the status report. JN prepared a draft of the status report based on the task planning, and they traded a few revisions of the document until DE submitted the final version.

Team 3 had some concern about member participation during this episode. In each of the 4 chat meetings, the participants discussed recent communication from non-participants and lamented the absences of the other members. For example, in a chat session on Monday, members wrote:

DL: What should we do? The decisions we have to make are very important to the business plan...Its hard without the others members....
DE: I've readed in the bussines plan document that it it must be a business to business e-commerce, as you said.
DE: I know it's hard, but i haven't received anything about JN and EO.
DE: JN knows we have this task, anyway. But i'm worried about EO.
DL: Yes...me to...

EO's only communication was in response to a request DE addressed to EO for feedback on the plan topic (EO: "I don't have possibility for chatting right now but I still read my e-mail so let me know what is your decision (both ideas are ok)."). The status report, which was submitted on time on Friday of week 4, noted, "We also have a few team issues from some team members. The most important issues from those members are: lack of participation, problems with

team schedules, as well as poor communication and cooperation.” They also noted concern with the speed of the chat server.

Episode 5: Business Plan Early

Also on Friday of week 4, DE proposed and pressed for a full-team meeting, “When could we chat ALL (I said AAAALLLLLL of us) again?” After complimenting DE’s work on the prior task, JN said he would change his schedule to accommodate the meeting (“disregard about not coming in on Monday”); EO and DL did not attend. The chat participants, who expressed concern about the speed and difficulty of accessing the chat room, extensively discussed the missing members as shown below:

DE: ok, at least you are here, because *I don't think EO will come...*

JN: No, I think we should make this for another time, perhaps more suitable for him and when this [chat server] is faster

DE: *And I'm not sure about DL... I haven't heard from him anymore since Wednesday..*

[skip 17 entries about potential chat times and the server speed]

JN: ok anyway- great work with the last assignment - thanks for doing that !

DE: thanks to you! ... >> *The problem is that i get a little mad when the other doesn't appear anywhere*

JN: I guess I could come later if it will make it easier for the others ?

DE: they're are not in touch... >> sorry, i don't get the structure, what do you mean?

[skip 4 entries about chat server]

JN: I could come later in the night, or even early morning, I'm the one who's furthest away from everyone else. So if it will help I'll turn up at whatever time.

DE: JN, thanks for that... but *until now you have been the only one who has worked...*

JN: che ??? *You've been here all along as well !!!!*

DE: they hasn't been in touch but you, they don't deserve you get up early in the mornings and got o beet too late... >> OF COURSE!! >> excuse my grammar.. but you know what i mean, don't you? :) >> *the matter is that*

this originally was a 4 members team, but it seems like it was only conformed by 2... >> I'm a little mad at them, they don't participate as they should... >> ...Well, DL participated a little bit with this task, but EO... I've received only 3 mails from him... >> the first in which we was introducing himself, an the other two telling us he could join us to chat... JN: yeah well, I don't know about that.Maybe because he doesn't like the idea of getting up early. >> I don't mind because I'm normally up late anyway, and it's worth giving it a try >> Let's set one up for you guys on Tuesday, for me that will be late Tuesday night, or early Wed morning and see how we go DE: but at least EO could tell us: "I don't like the idea", "you're crazy", "Why do i have to get up early instead you?".. >>...but he doesn't says anything!! [emphasis added]

A few minutes after the meeting, JN proposed a Tuesday chat meeting for a different time of day, but there was no response. JN also reminded them just before the meeting (“See you in 3 hours.....try not to late :).”), but only DE joined JN in the meeting. DE updated JN on some research she had done, and both confirmed that they had not heard from the other members. They focused on developing the idea for their business (DE: “great advance until now! :)”) and considered options to get the other members involved (e.g., asking for feedback (JN: “who knows someone may actually respond !!!!!!!”).

JN reported what happened at the meeting and requested possible chat times. After DL noted a time he would be available, DE proposed two chat meeting times (“I propose 2 schedules, choose whatever you like, I’ll be in both anyway.”), and DL selected the Thursday option. DE waited in the chat room for more than 30 minutes, but DL did not log in. JN wrote later that he would not be available and proposed a meeting for Sunday. After (a) the failed chat meeting, (b) an inquiry from the Coordinator regarding the “general statement about lacking team member participation” in the status report, and (c) a message from

DL blaming his absence on listserve and chat problems, DE directly emailed the Coordinator where she inquired about EO and indicated she would be “personally” in touch with DL, paraphrasing DL’s explanation about the technology problems (possibly to check the accuracy). Also on Friday, DE reminded everyone about a subtask deadline they had scheduled for Sunday and ended, “PLEEEAAAASE! Keep in touch.” DE then proposed a chat meeting and ended her message: “I hope E-V-E-R-Y-B-O-D-Y will be there (you know what I mean and who I am talking about).” Within 7 minutes, EO explained that he was too busy at work, and he withdrew from the team. JN wished him “good luck.” The Coordinator made sure the team was aware of EO’s withdrawal and emailed DE directly to ask that she contact the Coordinator if there continued to be a problem with DL.

In the Sunday chat meeting that DL did not attend, JN noted that the Coordinator’s response about EO was “pretty lame,” but DE “felt” it was “the same for us anyway.” They remained primarily task focused in this 5 hour meeting where they jointly edited and exchanged files and they assigned and volunteered for small subtasks. JN and DE also expressed understanding, trust, and excitement, with periods of playfulness and social exchange, such as the one below:

DE: What is the antonimous(?) for "refresh"? Well, they need the antonimous (?). hahaha
JN: ? what ? I don't understand. autonimous means by itself....
DE: no, I meant.. I cant find this word in English... wait..
>> Got it! It means "the opposite". Hot is the opposite of cold, isn't it?
JN: yes
>> in Italian Freddo / caldo, maybe Spanish is the same ?
DE: ok, that's the meaning for "antonimo"...

JN: opposite of refresh, I'm not sure there is one ???? possibly "leave alone" or "don't update"
DE: caldo? hahaha, in Spanish it means chicken soup! haha, Nothing to do...
JN: ha ha ha ha ha
[skip 43 entries on and off the task]
JN: antonimo your screen of files to see it
[skip 4 lines about files in the file sharing area]
DE: che???? antonimo is not refresh, but opposite, remember? :) hahaha.
JN: dhoop !
DE: haha, ok, thank you...

JN asked DE to request help from DL, which she agreed to do although ‘she did not think he would work.’ On Monday of week 6, DL posted a file to the file sharing, possibly in response to DE’s subtask reminder at the end of the previous week. With an invitation less than two hours before the Tuesday meeting, JN and DE chatted again without DL, with DE evaluating the file that DL had posted as lacking and JN suggesting that they could not match the content of the previous year’s winner because “it’s effectively just you and me!” The Coordinator reminded the team on Thursday of the approaching deadline.

Episode 6: Business Plan Late

DE and JN continued and intensified their collaboration in episode 6, while DL continued to be largely inactive. JN and DE logged over 34 more hours in the chat room and exchanged numerous direct email messages and working documents as they went about the task. JN and DE agreed that their collaborative approach allowed them to integrate their ideas better than other teams that divided up the business plan sections. DE suggested that “being just 2 people like us is better for us, i think... :) ;” JN agreed but remarked that “having a third to input other ideas would be helpful.” While they discussed and eventually decided not

to remove DL from the team, most of their communication was directed toward the task, interwoven with some playful and social exchanges. For example, in the middle of a meeting that was late at night for JN:

DE>>.
DE>>..
DE>>....
DE>>:P
DE>>:)
DE>>Im in future expansions projecitons right now...
JN>>ok - sorry was just dozing on the floor.....
JN>>go on.....
JN>>:b
DE>>ha ha what is dozing? sounds weird...:)
JN>>a little nap.....like in a trance, but more napping....
DE>>you must be laughing at me, aren't you?
DE>>ha ha ha ha
JN>>why wold you think that - yes I am but why do you think that ?
JN>>ahahahhaa
DE>>ha ha ha ha
JN>>:D

They pursued the maximum bonus points and were able to submit the plan early, but had to delay their submission on three consecutive days when they could not meet their “deadline.” DE and JN said they felt “strange” when DL unexpectedly attempted to join one of their last chat meetings, and both of the active members checked the chat room at different times the week after the deadline to say “bye.”

With the Coordinator’s assistance, DE and JN responded in several ways to DL’s lack of participation, as explained in the paragraphs below. First, DE and JN attempted to get credit from the Coordinator for having fewer active members. On Friday of week 6, JN reported DL’s absence to the Coordinator, saying they would “keep going, but wish to have this noted.... and possibly taken into account in grading.” Although they had reported missing members before, this message

represented an effort to raise the Coordinator's awareness of their situation so they could get a better grade or have a better chance of winning the competition (beyond the possible desire that the Coordinator could positively influence their team member's behavior). They expressed disappointment later when they perceived this would not be considered (DE: "To be honest..... because of the way [the Coordinator] wrote.... i guess he won't take into account that we are only 2 >>:(").

Second, the report to the Coordinator spawned internal and external communication about DL's participation. Since DL had logged into the website over the weekend, the Coordinator inquired directly to JN if the situation had changed, but JN confirmed on Monday of week 7 that DL had not communicated. The Coordinator then contacted DL. On Tuesday, DL apologized for his absence blaming technical and schedule conflict issues and explained that another exam made it unlikely that he would participate in the next chat meeting. JN replied sympathetically that they had it "quite well covered, it's just we don't want to see you lose out for lack of participation." DL provide a similar apology to the Coordinator, except DL omitted the explanation that cast doubt on his participation in the next chat meeting. The Coordinator stated his assumption directly to DL and the other members that DL would be getting more involved.

Third, DE and JN made some attempts through the listserve to inform DL of their activities and to request participation. For example, after scheduling the next meeting in a chat meeting with DE, JN announced the meeting through the listserve, adding: "Please attend, or inform of a better time." Unfortunately, many

of these requests came with little time to respond, and DL noted that he was only checking his messages 2 or 3 times per week due to his school commitments.

Toward the end, JN shared a draft of the business plan, and DL replied:

I read the Business Plan and all the files you have sent and I think it's excellent. I very sorry I couldn't be a greater part of it. I wish I did more than I did.

I couldn't be in the in last chat because I had classes that hour and besides the problems with the delay of my e-mail I had examinations that kept me very busy.

I know I you have all covered I and know will have a lower participation grade, but I want to know you consider that I am still a group member.

I notice the deadline is coming but please tell me if there is something I can do...

PS: DE, I didn't forget your MP3, I have just found a CD and I will transform it to MP3 and send to you as soon as possible.

The other members did not respond to this message, but they agreed this message (especially the music reference) was as an attempt to “convince” them “in a bad way.” DL apologized and blamed technical problems after unsuccessfully attempting to attend a chat meeting. JN did ask for help on a topic at that point, but DL did not reply.

Lastly, DE and JN discussed the situation with DL’s participation on several occasions. Activities included:

- Sharing and interpreting information about DL. For example, DE mentioned some new information from DL; JN thought she was referring to the file DL sent though the listserve (“seen it - yay ! nothing new there really,.....:b”). DE then forwarded it to JN:

DE: I sent him an e-mail like 4 hours ago.. asking him to give me some info about xyz.. >>.. and he answered like 2 hours later!" [skip 1 entry]
 JN: yeah great response time..... >> :(
 DE: that's good! It's a pity we didn't know him a little better.. i think... >> why that face, what's up? >> :)
 JN: I already [have] DL's info.....

JN later repeated his negative evaluation ("I read DL's file.....same as I said before...nothing new for us...."), and DE agreed.

- Describing faculty and Coordinator reactions:

DE: that was more or less what i told you, he practically told us go on go on, go on , but what about the people that does work like us?
 JN: Actually my teacher said the same "just do what you can..." duh:(
 DE: that's bad... very bad.... >>our teachers told us "if there is any problem, just let him or her go"

- Joking about DL:

DE: Maybe the best would be to have an office.. >>in every country we are willing to operate...
 JN: Can [DL] work out of [your] office ???? :)
 DE: DL?
 JN: hahaha
 DE: ha ha ha ha ha ha.

- Considering whether or not to remove DL from the team.

DE: do you really think we should include DL? >> I'm still thinking about that...
 JN: Well I don't want him to fail...but [the Coordinator] said we should leave him out if he really hasn't done anything..... >> I don't know..... is there any area he's put a contribution to ?
 DE: well.... he sent some info...
 JN: All I see is DE's contributions !!!!!
 DE: ha ha ha - don't say that ! you contributed a lot...
 JN: :)
 DE: i mean, yesterday... he sent me a file....

Having described each of team 3's episodes, the next section analyzes team 3 processes involved in control enactment.

4.3.3. Analysis of Team 3 Processes

This section explains how control was enacted in team 3 by discussing team control processes, team monitoring processes, contributing internal team processes, and contributing external processes and structures. Team control processes included pressuring that reinforced commitment among active members and chat meeting attendance, especially for those who had missed previously. Team monitoring processes included reminders about approaching deadlines and evaluations of the team's progress; monitoring of members included tracking output, sharing updates about a member's unseen behavior and conditions, and evaluations of inactive members' participation. Team processes that contributed to control and monitoring included technology appropriation (e.g., chat meetings), coordination (e.g., scheduling meetings at different times to involve inactive members), and production (e.g., working together in the chat room to write the business plan). External processes and structures, such as reporting inactive members to the Coordinator, also impacted control and monitoring in team 3. By examining processes both internal and external to the team, this analysis reveals processes and structures that contributed to control enactment. In addition to the textual analysis below, Table 4.6 summarizes changes in processes across episodes (see the introduction to this chapter for more information about the table.)

Team Control Processes

Control behaviors in team 3 intensified over the course of the project. DE was the primary initiator in the first episodes, but DE and JN worked more in concert for control purposes by the end of the project. The following paragraphs consider several features of control as it developed across the episodes in team 3.

First, team 3 made some attempts to establish a schedule and deadlines. In episodes 2 and 3, this was little more than identifying the stated GVT deadline and setting a deadline that would allow the finished product to be submitted on time. In episode 4, they also set some milestones for completion of the business plan. When they acknowledged they were behind schedule in episode 5, they ultimately focused attention on a final deadline for the business plan that would allow them to earn the maximum bonus points (as dictated by the GVT schedule and evaluation criteria). Team 3 then postponed submission on successive days until they agreed the plan was completed.

Second, as noted in the overview above, team 3 reinforced the importance of participation. At the outset, members stated their expectations for regular communication and becoming both a “good team” and “good friends, too.” In episodes 2 and 4, attempted to motivate participation by highlighting the work that needed to be accomplished. Furthermore, as discussed in the paragraphs below, team 3 stressed the importance of participation in chat meetings and commitment to the project. In addition, DE and JN considered firing DL from the team because he did not participate or contribute the way they believed he should have. However, they decided not to remove him from the team because DL

participated at a time when JN was absent and JN did not want to hurt DL's grade.

Third, the emphasis on participation became focused in a norm for chat meetings. Initially, DE stated her expectations that the team use chat to communicate. At the end of week 3, DE encouraged members to "sacrifice" to attend a proposed chat meeting. DE then made increasingly stronger statements to motivate ("the next tasks has a lot to do with discussions") and pressure ("When could we chat ALL (I said AAAALLLLLL of us) again?") participation in the chat meetings, spawning varying responses over the remaining episodes:

- EO withdrew within 7 minutes of one such statement.
- DL attended two initial meetings, then offered excuses to justify his subsequent absences.
- After missing the two initial meetings, JN altered his schedule to be more available for meetings in spite of his previous requests for greater advance notice before meetings.

DE and JN had 7 additional chat meetings in the last episode and did not openly question the need for these meetings. Team 3 continued to invite DL to the meetings, usually with short notice, and the other person expressed some concern whenever DE or JN did not attend or came late. For example, they exchanged:

DE: Where have you been? I was worried, you know?.... >> :)

[skip 2 lines]

JN: I didn't think we had another mtg until now so have worked from home :(

Finally, DE and JN made a strong commitment to the team. DE, in episode 1, showed interest in the team by affirming "I care about our team,

really.” While EO and DL did not demonstrate this commitment, DE and JN developed a strong in-group connection through their collaboration, to the point that they felt “strange” when DL unsuccessfully tried to attend one of their last chat meetings. There was certainly a playful and social element to their relationship, but most of the communication remained task-focused and was bounded by the task and time demands. Towards the end, DE and JN worked on the project with almost all of their available time, sacrificing sleep and ignoring other commitments. They discussed the commitment that they had made to the project:

DE: i mean.... are you aware of how much we care about this project? >>

It would be easy to me to get out of the team....

JN: of course !!! Would I be here at stupid o'clock night after night otherwise !!!!

DE: but i didnt, and you didnt neither.... >>after all....

JN: youwant to leave the team...but you're all we have !!!!

DE: NOOOOOOOOOO! OF COURSE NOT! >> :)

JN: :)

DE: I meant... >>Whe we were having problems with DL and EO... >> we could make the desicion of leaving the team, >> but we didn't ... it means a lot....

JN: good for us !

Interestingly, both of them logged into the chat room at different times after the project to say “bye”, and they sent requests to the Coordinator for several months after the project to find out who had won the contest.

Team Monitoring Processes

The active members of team 3 engaged in monitoring of other members and the team as a whole. For member participation, they initially noted the silence of EO and asked the Coordinator if EO was still on the team. Beginning

in the middle of the project when they started using chat meetings, almost every chat meeting included a discussion of missing members where the participants exchanged current information about those absent, assessed their degree of concern over the absence, and considered possible responses. This pattern became more active in later weeks as they attempted to increase participation and then determine if there was a basis for removing DL from the team.

The focal person's history in the team provided a basis for the conclusions drawn and actions taken. For example, in the first chat meeting, DE and DL expressed more concern about EO than JN, due to EO's infrequent communication. At the same time, observers often differed in the conclusions they drew and how they wanted to respond to that information. For example, DE and JN made different attributions about EO's behavior – JN blamed the inconvenient local time of the chat meeting while DE expected a response if EO were truly interested in participating. However, conclusions about other members became more similar over time as the active members repeated these discussions. For example, toward the end of the project, both DE and JN questioned whether or not DL was really having technology problems that inhibited his participation.

DE routinely warned the team about approaching task deadlines, and active members occasionally made evaluations of their progress. Toward the end, members gave more attention in their discussions to the remaining time until their targeted deadline and noted each other's conditions and participation.

Contributing Internal Team Processes

This section considers internal team processes of technology appropriation, coordination, and production. These processes directly impact control enactment by specifying which behaviors are monitored and controlled. These processes also indirectly shape control enactment by influencing the context in which control and monitoring occur among team members

Technology Appropriation – Team 3's appropriation of the available technologies was related to control and the other processes noted above. Obviously, given their strong interest in team discussion and in using the chat tool in particular, attendance at chat meetings was the primary focus of the team's control efforts. Participation in the chat meetings became equated with participating in the team. Although members pointed to short lead-times, schedule conflicts (due to other responsibilities or unfavorable local time), and technology access problems as reasons for attendance problems, they conducted 17 chat meetings of increasing duration over the last 5 weeks. Active members adjusted their schedules and made other sacrifices to accommodate the team.

Beyond serving as a defining feature of team participation and commitment, the chat meetings enabled some monitoring and socialization behaviors. Since the chat logs were not automatically shared with the non-participating members (unlike the listserve), the chat meetings offered a private opportunity to share and discuss observations, feelings, attributions, and potential solutions without the awareness of the non-participating members. Furthermore, the chat tool was the primary means the active members chose to exchange social

information while working on the task. This relationship-building seemed to support the strong in-group connection that formed between DE and JN.

A final consideration is the extensive use of closed channels by team 3. Direct email messages between active members became much more frequent, with some direct communication with the GVT Coordinator as well. The combination of chat and direct email messages made later communications effectively private to the active team members. While they occasionally posted updates or requests to the listserve and file sharing as a way to inform an inactive member, the direct communication may have made it more difficult for DL to determine what was going on and to make attempts to rejoin the team.

Coordination – Team 3's efforts at coordination focused primarily on task completion and involving members. In the first episode, the only attempt at coordination was a suggestion by DE that they begin looking at business plans to prepare for the project. At the beginning of episode 2 (after reading the GVT task instructions and schedule), DE proposed a process for completing the personnel selection exercise. After a failed chat meeting (JN said he received the message after the time), DE revised the process of gathering members' input, and JN suggested that DE finalize and submit the results, noting that they had not heard from EO and would not hear from DL due to his vacation. For the preliminary research in episode 3, DE made sure the previously inactive members were aware of their subtasks (as suggested in the GVT task instructions) and requested in a direct email that JN coordinate the task due to his proficiency in English. As

members said when they would work on the research, JN set a time near the GVT deadline when he would compile, edit, and submit the deliverable.

In episodes 4 and 5, the emphasis on chat meetings required and enabled additional coordination efforts. Team members scheduled chat meetings with relatively short lead-times (maximum of 1-2 days), ignoring JN's prior request for advance notice and requiring members to be in constant contact if they wished to participate. Although they kept working when others did not attend the meetings, active members expressed frustration when anyone missed, which generated additional efforts to schedule meetings accompanied by efforts to motivate and pressure chat participation. The chat meetings also allowed participants to discuss and agree upon next steps before they proposed these to the rest of the team. Members continued to volunteer for and assign small subtasks, as they had done in earlier episodes.

In the final episode, DE and JN synchronized their activities much more closely as they approached their targeted deadline. They established a goal to meet the early submission deadline for the maximum bonus points, but they changed this goal on three consecutive days each time they could not meet the objective. Beyond scheduling the next chat meeting, active members identified small subtasks they were currently working on or that they would accomplish shortly, and they also requested actions for the other to take. In addition, they coordinated exchanges of documents and jointly edited documents, identifying which copy would be the master version in situations where they both need to work simultaneously. The vast majority of these decisions were handled in chat

meeting or direct email between DE and JN, which meant that DL was not part of this dialogue. However, DE and JN did send messages to the listserve periodically that said what they were doing; however, these messages were typically short and likely did not cover all that was happening on the task.

Production – Team 3's methods of production evolved over the course of the project; initially, the emphasis was on one member integrating individual contributions. In episode 2, DE and JN posted rankings of the candidates for the personnel selection exercise, and JN asked DE to submit the report. DE privately reconciled the differences by choosing JN's answer, and she submitted the memo summarizing their decision. For the preliminary research in episode 3, members worked independently (privately) on their individual contributions; JN enhanced, shared a draft, and submitted the finished product. This approach created the minimal requirements that each member understand their task responsibilities and execute them before a deadline.

As they approached the subsequent tasks, team 3 placed much greater emphasis on team collaboration and discussion. For the task plan and status report in episode 4, DE and JN made proposals for the business plan topic, then the active members of the team developed the content through chat discussions and iterations of the deliverable until they were satisfied. DE finalized the status report. For the business plan task, discussions of guides (e.g., similar businesses) and content became more extensive, and iterations of the business plan among the active members grew more frequent. Members accomplished small tasks of short duration privately, but most of the emphasis was on joint collaboration. Active

members expressed satisfaction that this approach to the business plan task was more appropriate than other means of organizing the work (e.g., rather than dividing up sections of the business plan among members). When coupled with the use of a synchronous chat technology, this form of collaboration placed additional demands for temporal coordination and member availability.

Contributing External Processes and Structures

Other dimensions impacting the development of control were team 3's interactions with the Coordinator and awareness of external structures. Throughout the project, they paid close attention to the task instructions and asked the Coordinator for clarification about what was expected. In addition to reminders from the Coordinator about GVT deadlines and grading criteria, they reminded each other about these structures and considered it in their planning as noted above. As they experienced participation problems in the opening weeks, they relied upon the Coordinator to determine the status of a missing member and solicited guidance about how to proceed. In their status report to the Coordinator, DE reported issues including lack of participation and cooperation "with some team members." She explained the situation further in a direct email message after the Coordinator noted completion of the task and offered to follow up with specific members if necessary. At this point, DE made one of her most aggressive attempts at peer pressure, prompting EO to withdraw from the team. Active members expressed dissatisfaction with the Coordinator's response to their situation, but they continued to report participation problems to the Coordinator to manage impressions "for grading purposes." They also sought and received

clarification about the policy for excluding members from the team, although they ultimately decided to do what they felt comfortable doing.

Having introduced, described, and analyzed team 3, the next section briefly summarizes the chapter.

4.4. CHAPTER SUMMARY

This chapter presented case studies of three global virtual teams. For each team, the chapter gave a textual description of events in each episode combined with a table summarizing features of the processes, structures, and outcomes for each of these episodes. Additionally, the chapter provided an analysis of key features of team processes that were relevant to control complemented by tables summarizing changes in these processes across episodes. Similarities and differences among the cases are integrated in the findings shown in the results (see chapter 5).

Chapter 5: Results

Based on cross-case analyses of three global virtual teams, this chapter presents results to the question: how is control enacted in global virtual teams? The results are organized as follows:

Control Enactment in Team Processes (section 5.1) – This section examines team control and monitoring processes. Inside each team, one or more members took actions to enact processes and structures that supported monitoring and control among team members. At the same time, people and structures outside of the team also contributed to team control and monitoring. This section describes processes and structures enabling control enactment, using selected examples from the cases.

Control Enactment over Time and across Teams (section 5.2) – Summarizing and drawing heavily upon within-case descriptions of each episode (see chapter 4), this section proposes that the type and sequence of each team's control-related processes imply a team-specific approach to control. The three teams did not attempt to regulate behavior in quite the same ways, and some of their processes changed over time. The control approaches and how they changed are compared and contrasted across teams.

5.1. CONTROL ENACTMENT IN TEAM PROCESSES

This section emphasizes control enactment in team processes for control and monitoring. Team processes for control (section 5.1.1) include specifying

team structures for control; pressuring; and termination of team membership; team processes for monitoring (section 5.1.2) include team monitoring and member monitoring. This section also considers contributing internal team processes and structures (section 5.1.3) and contributing external processes and structures (section 5.1.4) that impact team control and monitoring. Table 5.1 summarizes the processes and structures described in this section.

5.1.1. Team Processes for Control

The analysis revealed three team processes for control among team members. First, teams specified structures for control, such as deadlines. This *process* of forming structures (which could also be termed “explicit structuring”) had a connection to control that is distinguished from the role of the actual structures themselves (see section 5.1.3 for team structures). Second, teams pressured members to engage in desired behaviors or attitudes. Third, teams also voluntarily and involuntarily terminated a team member from the team. Each process is described below.

Specifying Team Structures for Control

Teams on several occasions formed structures that enabled control. All three teams set deadlines during the project; these included interim deadlines for member subtasks as well as final deadlines for the overall task (that preceded the externally-imposed deadlines). MA of team 1 set several interim deadlines for the early tasks, but then she admitted struggling later in the project to specify subtasks and deadlines for the business plan. Team 2, in the first week of the project, set an aggressive goal for the completion of the entire project. Team 3 also created

some subtask deadlines as well as a final deadline for the business plan, which they set later in the project. For each team, communication that created these deadlines always included a proposal from one member that specified a date when a certain task or subtask should be completed. The proposal was sometimes followed by discussion or agreement from other teammates.

In addition to deadlines, teams also explicitly formed norms for participation. For teams 1 and 2, the task plan instructions included questions to facilitate a discussion of norms. For example, one question asked, “What should be considered unreasonable behavior or poor performance that could result in dismissal from the team?” Team 1 indicated: “Not doing work in deadlines?” Some members of team 2 pointed to lapses in communication, but they expressed “hope” that it would not happen. Although team 3 was one of the groups that did not receive these questions, they did have some proposals that became norms (e.g., DE: “I think If one of us can’t join the rest [at the chat meeting] (for any reason), the rest shouldn’t stop working for that, ok?.”). Similar to deadlines, the formation of explicit norms included a proposal for the desired behavior, sometimes followed by discussion or agreement from other members.

The formation of these structures had implications for control. First, the structures themselves reflected expectations for member and team behavior and outputs that could often be monitored by all members of the group. The impact of these expectations are further illustrated under monitoring and team structures below. Second, the act of proposing a structure served to publicize one member’s privately-held expectations, making it possible for other members of the group to

at least consider those expectations in their behavior. For example, after MA in team 1 proposed a deadline for each member to share drafts of their individual research, her teammates gave apologies for missing the deadline. Finally, the act of discussing a proposed structure may have increased the potential for greater agreement about expected behaviors and possibly increased the likelihood that others would act desirably and enforce these expectations.

Pressuring

Some of the more overt control-related communication acts were those where teammates attempted to influence each other to create desired attitudes or behaviors; pressuring contributed to control in at least three ways. First, pressuring attempted to motivate and reinforce specific, desired behaviors. Team 1 made five requests in a 48-hour period for a teammate to provide comments on a working document; MA later said she had to “kick AO for several days to have him write a few comments.” After complimenting prior group communication, JN in team 2 encouraged, “Please keep this up.” Following several absences at chat meetings, DE in team 3 wrote: “I hope E-V-E-R-B-O-D-Y will be [at the chat meeting] (you know what I mean and who I am talking about).” Communication of this sort made it clear what behaviors were expected by teammates. Second, pressuring gave signals about the urgency and importance of desired behavior. MA, once she learned the deadline for team 1’s first task, suggested that they “do something quickly”; this is contrasted with her requests for the preliminary research where she admitted, “It’s not that we’re in rush or anything.” Team 2 showed a sense of urgency and anticipation from the

beginning (GO said he wanted to start “soon” and “now”); this continued throughout the project (e.g., DY wrote at the beginning of the business plan task: “Let’s start ... and kick some arse!!”). DE, to emphasize her desire for full attendance at a chat meeting, wrote: “When could we chat ALL (I said AAAALLLLLLL of us) again?” Taken together, these first two points emphasize what behaviors are desired and the urgency of those behaviors; the third area is more related to attitudes.

Pressuring also communicated and attempted to shape the commitment of members to the team. This could be commitment to a specific action or a more general attitude toward the performance of the team. For example, team 2 encouraged members to “make an effort” to attend chat meetings (i.e., a specific action) as well as less specific injunctions to “work hard”, “work more”, and make it a “team effort.” Teams sometimes stressed the common good over personal preferences or well-being. Members of teams 2 and 3 encouraged members to “sacrifice” to attend chat meetings. PO of team 2 addressed one member who had agreed to attend a chat meeting, “I’m sad about you, DY, that will have to wake [so] early in the morning, but is part of the deal.” This communication may have reflected as well as shaped members’ commitment to the team.

Termination of Team Membership

Members changed the official composition of their team by terminating team membership. This occurred involuntarily for a member who was fired from

the team or voluntarily for a member who decided to resign from the team. Both actions are discussed below, with consideration of their connection to control.

Firing – As a last resort, teams could terminate the membership of a teammate. Active members of teams 1 and 3, noting lacking participation from one teammate, discussed the possibility of officially removing the member from the team. Team 1 chose to do so, while team 3 did not. These discussions suggest that firing a member represented a potential consequence or punishment for recurring, undesirable member behavior. The ability to remove a teammate created the opportunity for members to decide how they wanted to respond equitably to this behavior. Team 1 removed AO as a matter of fairness to themselves, since AO was on vacation and they were still “working hard.” Team 3’s decision against firing was also premised on equity; JN did not want to hurt DL’s grades since DL participated earlier in the project when JN had not been active. In both teams, the firing decision apparently had more to do with active team members’ agreements about what was fair than making an attempt to alter the behavior of the inactive member. That is, firing was primarily treated by these teams as a potential consequence of prior behavior rather than an active threat to influence future behavior.

Nevertheless, the potential for involuntary termination may have impacted member motivation. Each member received instructions before the project began that included the statement: “Teams have the right to expel students from their teams for unreasonable behavior or poor performance.” Although the study was not designed to assess this statement’s motivational impact on individual

members, DL in group 3 did ask his team late in the project if they still considered him part of the team. DL was apparently aware of this potential consequence, but his behavior did not change radically late in the project to participate in the ways desired by his teammates.

Resignation – At the same time, a team member may decide voluntarily to withdraw from the team. Teams 2 and 3 each had one member that resigned from the team in the middle of the project because he or she could not do (or would not do) what the other members had requested. In team 2, RA attributed her resignation to health problems in her message to the Coordinator (“First I was down with normal flu. Then my temperature went so high that I was couple of days in hospital. Now I'm still out off order.” [sic]). Both DY’s and GO’s survey comments referred to RA’s health problems as the reason for her resignation. PO’s survey comments were less certain, “[I] believe this exercise is very important and challenging, but unfortunately we had a member that didn't thought so, or she got sick, I don't know... [sic].” In team 3, EO explained, “I am really sorry but I can't go on this gvt project because right now I am so busy with my work that I don't have time enough for studies and for this project as you probably have noticed. And it would be unfair to let you do most of works just because I'm busy. I wish you luck with this gvt project!” JN wished EO “good luck” and wrote via the listserve later that day, “You got the news on EO, I suggest we carry on as normal, we weren't using him anyway :(.” DE said it was the “same for us anyway” in her chat conversation with JN.

Although it is an action of the individual rather than the team, resignation still has some connection to control. First, resignation was an individual member's response to control. RA withdrew from team 2 after the team had expressed concern about RA in the status report and after GO and the Coordinator had inquired about her status. EO's resignation in team 3 occurred within seven minutes of an attempt by DE to pressure attendance for their next chat meeting. Both RA and EO apparently found it preferable or necessary to resign rather than continuing to ignore team requests or attempting to make personal changes. Second, the resignation inspired team discussion to define the impact on the team and its members. Despite some frustration, team 3 agreed that the loss of EO would not have an impact, since he was not contributing before the resignation. Team 2 used this opportunity to encourage commitment to the team to be able to pick up RA's responsibilities (DY: "we are there to help you"; GO: "we need to work more because we don't have a teammate."). Although the resignation created additional work for some members or at least eliminated the opportunity to share work, it may have also removed some of the distractions associated with non-participation.

As described above, team processes of specifying, pressuring, and termination each contributed to the regulation of team and member behavior; the next section examines team processes for monitoring.

5.1.2. Team Processes for Monitoring

Monitoring is a process of tracking, interpreting, and transmitting status information about a specific referent – the team as a whole or a specific team

member. As described below, monitoring is enacted in communication among team members as well as in the interpretations of individual members. The results below are organized by the referents for monitoring: team monitoring and member monitoring. The presentation of member monitoring also distinguishes between monitoring behaviors and output in this context.

Team Monitoring

Team members monitored their teams by drawing attention to existing structures as standards for behavior and by tracking, interpreting, and transmitting status information. First, team members periodically informed or reminded their teammates about structures that had implications for group and member behavior. These structures – such as deadlines, team chat meetings, and evaluation criteria – were initially instituted internally through prior group interactions or externally through instructions from the Coordinator. All of the teams referred to external evaluation criteria and sent reminders about approaching deadlines (e.g., DY in team 2: “Just to remind you guys, our next task is due next Wednesday). Teams 2 and 3 also sent reminders about upcoming team chat meetings. Team communication that drew attention to these structures usually presented the structure as a standard that should guide future behavior; this communication also indicated which behaviors the team would likely monitor in the future.

Second, team members tracked, interpreted, and transmitted team status information. All of the teams made assessments of the current state of their collective work. Team 1 made general evaluations (e.g., MA wrote, “... I have a feeling that [the status report] doesn’t require that much anymore.”) as well

detailed lists of open issues that needed to be addressed for the business plan. DY in team 2 complimented the team on the completion of each of the early tasks and also noted when they missed their early “due date” for the business plan. At end of the project, team 3 frequently referred to the time remaining before their target deadline and how members felt about their ability to meet the target. These communication acts allowed the teams to highlight discrepancies that needed to be addressed as well as to transition from the close of one task to the beginning of the next one.

Member Monitoring

Teams also tracked, interpreted, and transmitted status information about individual team members. Some of this monitoring was done by teammates while other member monitoring was actually completed by the team member about himself or herself. Features of member monitoring discussed below include unseen behaviors and conditions; observable outputs; and member evaluations.

Teams attempted to track, interpret, and transmit information about the physically unobservable behavior and conditions of individual members. For example, team 1 initially paid attention to several behaviors that they could not see (e.g., accessing the team website, reading the task instructions, checking email) and later highlighted conditions that could impact members’ work on the project, such as outside work and school commitments. Teams attempted to monitor members’ unseen behaviors and conditions in several ways. Members provided updates and reminders about their own behavior and conditions; for example, HR in team 1 twice told the team about his attempts to collect

information for the preliminary research task. Also, members made inquiries about the behavior or conditions of their teammates (e.g., MA in team 1 asked the other members if they thought they would have their research drafted “today”), and they repeated known information about teammates on some occasions (e.g., JN in team 3 noted that DL was currently on vacation, so he would not be available to help on the current task.). On some occasions, members simply made assumptions; unfortunately, this contributed to team 1’s first failed chat meeting. Because HR did not receive a reply, he assumed that MA did not read his email message about the meeting, so HR did not attend the chat meeting.

Teams also attempted to track, interpret, and transmit status information based on observable output from members, such electronic communication and work products. This frequently took the form of noting that they had or had not received desired output from a teammate. Teammates on teams 2 and 3 frequently stated that they were “waiting” for certain output from one or more team members, while team 1 often repeated requests for output that had not been provided. In addition, team members usually informed each other when they had provided new work products; this was typically an email message saying that a new document was posted on the bulletin board or in the file sharing area.

Finally, team members evaluated the current status or overall participation of specific members. Typically, active members evaluated their less active teammates based on the information gathered as just described. For example, MA of team 1 explained, “We kick out of the team AO because [he] did not work as expected....” Team 1 justified this decision in a memo that described AO’s

lacking communication behaviors and inadequate contributions. In each of team 3's chat meetings, participating members exchanged information about absent members, assessed their degree of concern over the absence, and considered possible responses. Occasionally, some team members evaluated their own behavior by offering an apology to the team for not meeting expectations. For example, RA in team 2 apologized twice, "Sorry that i haven't do almost nothing [sic]"

As described above, processes of team monitoring and member monitoring each played a role in the regulation of team and member behavior; the next section examines the contribution of other team processes.

5.1.3. Contributing Internal Team Processes and Structures

Based on analysis of related internal team processes (i.e., coordination, production, and technology appropriation) and team-initiated structures in each case, this section presents key team processes and structures that contributed to control and monitoring among team members.

Specifying Processes and Structures for Task Production

Teams specified processes and structures to accomplish each task. Team 2 began the "process to define the [business plan] project" in the first few days. All of the teams engaged in some communication to specify the process for each of the assigned tasks. One member would typically propose a sequence of one or more steps (e.g., chat meeting, task assignment) for the team or specific members to follow. These steps were frequently refined through discussion, explicitly adapted after monitoring the progress of the team, or altered by subsequent

actions of teammates. For example, team 3 scheduled chat meetings to discuss the business plan task and then rescheduled the meetings after some members did not attend.

Specifying team processes for task production had several implications for control and monitoring. First, specifying the production process impacted the ability to specify control structures. MA in team 1 suggested for the business plan task:

And we have to set also other goals than just the final deadline. We have to divide this job into smaller pieces that will have deadlines of their own. That way we'll avoid the situation where one had thought of making his/her part on the last day and the others have to wait for that to proceed.

MA later requested help from her teammates for this purpose ("I don't seem to know where to start"). Second, the way teammates accomplished the task had implications for member monitoring. Public task approaches made task information readily available to members while more private approaches did not. For example, members of team 3 that attended the chat meetings knew exactly what they were accomplishing because they were discussing it while they wrote the document. Team members who did not attend the chat meetings were unlikely to know much about the project since task information was rarely summarized for their benefit.

Finally, specification that coupled technology appropriation with output-oriented production enabled member monitoring and pressuring. MA in team 1 initiated the preliminary research task on Monday of week 2 by asking each member to complete his or her research by the next Monday. A few hours later, MA said she was searching for information and,

...felt that I might not be doing it right.. Do you think it would be good if we all would upload our plans/documents to the 'file sharing' no matter how drafts they are? I was thinking it might be helpful to see what you've done and how you've started with your work. I have mainly copy-pasted information from the web and I haven't really found too much of RELEVANT information. I just thought it might be easier if I could check your drafts once and a while to see what kind of documents you're writing....

Under this proposal, members would not have to (a) rely upon updates from their teammates to know what they were accomplishing or (b) wait until the output was finished to know what teammates had done. The other members of team 1 did not do as MA asked until later tasks, but this proposal did mark the beginning of updates from members about their own behavior. By reconstructing the means of sharing task information, members could alter the type of observation necessary to monitor. That is, shifting behavior from informal progress reports to sharing drafts moves the observation from indirect observations of behavior (what the person says they are doing) to direct observations of behavioral outputs (what I observe the person has produced).

In creating the process to be used for a particular task, teams often developed a variety of team structures such as roles or guides. These are considered in the next section with other team structures that had implications for monitoring and control.

Team Structures

As implied above, the global virtual teams in this study created a variety of structures that shaped team and member behavior. The paragraphs below describe structures that have been grouped for expositional purposes into three

paragraphs – (1) task assignments (subtasks), deadlines, and guides; (2) team norms, routines, and roles; and (3) team chat meetings.

Teams developed structures – subtasks, task deadlines, and task guides – that specified responsibility, timing, and content for expected task output. Subtasks identified which members were responsible for the completion of specific electronic communication or work products. Following the external instructions for the preliminary research task, each of the teams encouraged each member to produce research on the state of electronic commerce in one country. Task deadlines, as noted above, identified times by which tasks were to be completed by individual members or the team as a whole. Task guides, such as a business plan template provided by the Coordinator or websites found by team members, clarified the content needed to complete subtasks. Team 2 referred to their “standard guide” when they made task assignments for the business plan. Together, these structures contributed to control by clarifying the responsibility, timing, and content for expected task output; teammates could then monitor or pressure a member for specific output.

Teams also formed structures – norms, routines, roles – that specified the nature, timing, and responsibility for expected behaviors. Team norms usually related to communication (e.g., frequency for checking email) or participation (e.g., possible removal from team 1 for “not meeting work in deadlines?”), revealing the nature of expectations for member behavior. Team routines were typically implicit patterns of recurring behavior. For example, DY in team 2

reported the status of each member's work by noting the task output received (or not received). One message began as follows:

PRELIMINARY RESEARCH

GO: I've got yours.

PO: I've got yours.

RA:

DY: I've done mine. If i don't get yours soon RA, i'll have to send mine in.
So we will not be over due. [sic]

This action of noting the status of task output (in the format above) occurred several times as team 2 prepared each of their required deliverables. In addition, although other members occasionally assisted, each of the three teams had one member who acted as a team coordinator: identifying task requirements; proposing actions, responsibilities, and deadlines; and monitoring member and team performance. Team 2 elected one member to this role, while the other teams had one member who displayed this configuration and pattern of behaviors more actively and consistently than other teammates over the life of the team. In each of the teams, the "team coordinator" chose to specify and monitor expected behavior. Together, these structures specified the nature, timing, and responsibility for expected behaviors; these expectations, as they developed and were reinforced through monitoring and pressuring, became an important aspect of control.

Finally, team chat meetings had special significance for control in two of the groups. Unlike team 1 which abandoned chat after two failed attempts ("no more chat after this, OK?"), teams 2 and 3 began with the stated expectation that chat meetings would be a regular practice (team 2: we need to schedule our "first meeting"; team 3: "ICQ [chat tool] is going to help us a lot"). Team 2 exchanged

several messages to schedule and then confirm each of its 3 chat meetings; they mentioned chat in at least half of their listserve messages as they pressured members to “make an effort” and “sacrifice” to attend. After two failed chat attempts, team 3 conducted 17 chat meetings logging over 50 hours of elapsed meeting time, although only two members participated in each meeting. Team 3 increasingly pressured those that missed the meetings to participate. By specifying the time for a meeting, the team could then pressure and monitor attendance at the meeting.

Having considered the contribution of these team processes and structures to control enactment, the next section examines external processes and structures.

5.1.4. Contributing External Processes and Structures

Teams encountered external structures and processes that also contributed to control and monitoring among team members.

External Structures

The externally-constructed tasks, deliverables, and deadlines imposed some external control on the teams. The deliverables codified certain milestones for the business plan task (e.g., completing initial research, selecting the business idea, completing the business plan) while remaining silent about other milestones (e.g., completing the first draft). In most instances, team deadlines were built upon these external deadlines and, therefore, these task milestones. In the early tasks, teams also tended to follow suggested processes in the task instructions. Teams 1 and 3 were particularly attentive to these external structures as they monitored and coordinated team efforts. Some subtask assignments resulted from

following and interpreting the GVT task instructions. Other structures, such as the evaluation criteria used by the GVT Coordinator or the participants' faculty sponsors, may have also regulated the behavior of team members.

External Processes

Two control-related processes – external specifying and external monitoring – involved parties external to the team, such as the GVT Coordinator or the participants' faculty sponsors. While most of the task-related structures and evaluation criteria were made available at the beginning of the project, the Coordinator did periodically provide announcements or answer questions that specified what was expected from members. The Coordinator also monitored the teams and individual members by warning about approaching deadlines, acknowledging receipt of deliverables, noting which members had contributed to the preliminary research task, and asking teams at the beginning of the project to report inactive members. All of the teams chose to report inactive team members, with team 3 reporting members on several occasions.

The next section compares and contrasts how these processes and structures were used over time in each team.

5.2. CONTROL ENACTMENT OVER TIME AND ACROSS TEAMS

While section 5.1 presents processes and structures available to each team for control purposes, this section emphasizes how each team actually enacted control. First, I highlight differences in control enactment across teams (section 5.2.1), summarizing which processes and structures each team used in its

approach to control. Second, I examine control enactment over time (section 5.2.2), identifying changes across team episodes as well as sequences within episodes.

5.2.1. Control Enactment across Teams: Compliance and Commitment

The three teams in this analysis used the processes and structures identified in section 5.1 at different times and to varying degrees. Table 5.2 illustrates the use of these processes and structures in each team episode. Not only did the teams vary in the timing and intensity with which they used certain team processes, but some processes were particularly significant to each team's enactment of control. In particular, team 1 emphasized *compliance* with expected behavior and output, while team 2 encouraged *commitment* to expected behavior and output. Team 3 used both *compliance and commitment* approaches, eventually emphasizing commitment among active members and compliance to inactive members. The following paragraphs tie key processes and structures to each team's more general approach to control.

Team 1 reinforced team and member compliance by monitoring external structures, specifying and monitoring member behavior and output, pressuring for compliance, and firing an inactive teammate. Team 1 identified external structures to guide their behavior; these included GVT deadlines (MA: "... the first task ... ends TOMORROW and that means we all should do something quickly.. :) ") and evaluation criteria (MA: "All the comments in chat area + bulletin board + file sharing part will be visible for those who evaluate our work. So add lots of stuff on those pages so we'll get good marks of this project.. :) ").

MA specified interim deadlines for member subtasks and monitored the team's progress toward each deadline. In particular, member monitoring showed when members had not provided expected output, and pressuring encouraged team members to provide that output (MA: "...we had to kick AO for several days to have him write a few comments."). When AO did not provide a usable contribution to the business plan, team 1 fired him because he "did not work as expected." As such, team 1 attempted to stay in compliance with external structures and required all team members to meet expectations.

Team 2 reinforced member commitment to the team and to expected behavior and output by specifying and monitoring internal structures and pressuring and monitoring for member commitment to expected behavior and output. Team 2 specified its own deadlines for completing the business plan (DY: "I'm keen in getting this Business Plan out the way A.S.A.P. If we work hard, I believe we can knock it off at least 1st week of April.") as well as chat meetings to facilitate communication; they more actively monitored these internal structures than those imposed externally. Pressuring encouraged member "effort" and "sacrifice" to fulfill specified behaviors or output, particularly attendance at team chat meetings. Member monitoring revealed personal commitment to the team (PO: "I'm happy to be working with people who take things seriously") as well as repeatedly noting the status of expected output. Even after RA resigned for health reasons, they reaffirmed their commitment to the team (GO: "we need to work more because we don't have a teammate").

Team 3 reinforced both commitment to the team and compliance with expected behavior or output by monitoring external structures, pressuring for commitment among active members, pressuring for compliance among inactive members, and specifying and monitoring expected behavior and output. Team 3 monitored external structures, particularly GVT task deadlines, to ensure compliance. Pressuring reinforced commitment among active members (DE: “are you aware of how much we care about this project?”), encouraged team members to commit to desired behavior or output (e.g., “sacrifice” to attend chat meeting), and also demanded compliance (JN: “please attend [the chat meeting] or inform of a better time”). Member monitoring focused at different points in the project on commitment to and then compliance with specified behaviors and output. During chat meetings, participants often had extensive discussions of missing members, evaluating their degree of concern over the missing member as well as formulating potential responses. In addition to reporting inactive members to the Coordinator, members extensively considered but decided not to fire DL. Active members seemed to expect commitment and were willing to request compliance from inactive members until they determined that was futile. In the end, DE and JN unofficially redefined the group as just the committed members (DE: “our team was practically formed by only [JN and me]”).

To summarize, this section stressed each team’s approach to control – compliance, commitment, or both – as seen in the processes and structures enacted. Key distinguishing features included the type of pressuring and monitoring of external versus internal structures. Team 1 pressured members to

achieve compliance with external deadlines. Team 2 specified internal structures (e.g., chat meetings, subtasks) and pressured members to achieve commitment. Team 3 pressured all members to achieve commitment to internal structures (e.g., chat meetings), then pressured inactive members to achieve compliance. The next section identifies additional differences across teams by highlighting temporal issues of control enactment identified in these teams.

5.2.2. Control Enactment over Time: Changes and Sequences

Control enactment in each team had certain changes and sequences over time. First, I consider the major changes across episodes. Then, I examine the underlying sequences of team processes within episodes.

Changes in Control Enactment across Episodes

The teams in this study varied in how control changed over time. Team 1 began control activities in episode 2 and experienced an interruption in episode 5 that preceded some minor changes in the last episode. Team 2 maintained relatively constant processes and structures across episodes, except for some difficulties in episode 4. Team 3 began a dramatic shift in episode 4 that increased control activity for the rest of the project. See Table 5.2 to compare the intensity of processes and structures across episodes. The paragraphs below further describe these changes in control enactment across episodes.

Team 1 showed three overall changes in control enactment across its six episodes. The first change marked the beginning of episode 2, when MA announced that they had a GVT deadline approaching. MA began her implicit role and routine of monitoring, specifying, and pressuring that enabled

accomplishment of the personnel selection memo, preliminary research report, task plan, and status report. The second change began when MA began attempting to specify subtasks and deadlines for the business plan (MA: “We have to divide this job into smaller pieces that will have deadlines of their own.”). MA asked for help with this at the beginning of episode 5, admitting “I don’t seem to know where to start.” Members did not make suggestions and noted other commitments requiring their time, so they delayed working on the project until the next week (with the exception of some individual work by HR). The final change occurred in episode 6 as team 1 became more active working on the project. MA continued to specify and monitor, but she collaborated more heavily with HR in defining and accomplishing the task. They were both involved in the decision to fire AO for not contributing to the business plan. Team members reported little change in their perceptions of team control from the beginning of episode 5 until after the project.

Team 2 maintained relatively constant processes and structures across episodes, except for some difficulties in episode 4 at the beginning of the business plan task. In addition to RA’s withdrawal and some periods of member silence (3 or 4 days), team 2 had more difficulty holding a chat meeting. DY cancelled at the last minute before a scheduled meeting, GO sent an apology for not being able to wait very long, and PO blamed a work emergency for not showing up. Team 2 experienced two more chat failures on successive days. Both of these meetings were scheduled with short notice, and they varied from their normal scheduling process where each member would confirm he would attend at the local date and

time for the meeting. At the beginning of episode 5, members discussed the reasons for these problems and scheduled their next chat meeting further in advance using the scheduling the process that had used before episode 4. The break in routine for episode 4 may have contributed to the difficulties they experienced then; otherwise, team 2 maintained similar processes and structures during the project. Team members reported little change in their perceptions of team control from the beginning of episode 5 until after the project.

Team 3 began a dramatic shift in episode 4 that increased control activity for the rest of the project. While they completed the personnel selection memo and preliminary research report in episodes 2 and 3, team 3 had primarily relied on the Coordinator to handle participation problems and had done little beyond monitor the team and members. In episode 4, DE began scheduling chat meetings and encouraging members to “sacrifice” to attend. With no communication from EO and just two members in attendance at each of the four meetings, team 3 reported several participation problems in their status report. In episode 5, team 3 made more efforts to achieve participation in the meetings, including more direct statements to pressure attendance: “I hope E-V-E-R-Y-B-O-D-Y will be there (you know what I mean and who I am talking about).” After EO’s resignation and unsuccessful attempts to get DL’s help, DE and JN focused on their intense collaboration using chat meeting, notifying the Coordinator for “grading purposes” that they were not receiving help from DL even though they decided not to fire him. Team members reported a large increase in their perceptions of team control from the beginning of episode 5 until after the project.

Despite their differences in pattern, one commonality should be noted across teams; a break in routine made it difficult to sustain team processes. For example, MA's inability to specify subtasks and deadlines in episode 5 made it hard for team 1 to proceed on the business plan. And, team 2's break from their chat scheduling routine led to two chat meeting failures in episode 4. The next section further explores these routines by examining the sequences in team processes within and across episodes.

Sequences of Team Processes

The three teams used their team processes in different sequences. The compliance approach of team 1 involved specifying, monitoring, and then pressuring member completion of desired behavior or output. The commitment approach of team 2 emphasized specifying, pressuring, and then monitoring member commitment to (and completion of) desired behavior or output. The approach of team 3 emphasized specifying, pressuring, and then monitoring both member commitment to and compliance with desired behavior or output.

The key sequence of processes that characterizes team 1's approach is specifying, monitoring, and then pressuring specific behavior or output to achieve compliance. The processes listed below occurred in approximately the following sequence:

1. Identifying external structures and adopting them as standards to guide team and member behavior.
2. Specifying desired member behavior or output.
3. Monitoring desired member behavior or output for compliance.

4. Pressuring member(s) for compliance.
5. Monitoring team status for compliance with external control structures.
6. Terminating team membership.

The first process prompted the beginning of episode 2 and each subsequent task. Numbers 2-5 usually occurred multiple times within each episode and in approximately the same, cyclical fashion. Number 6 happened only once near the end of the business plan task. To summarize, the compliance approach of team 1 emphasized specifying, monitoring, and then pressuring member completion of desired behavior or output.

The key sequence of processes that characterizes team 2's approach is specifying, pressuring, and then monitoring specific behavior or output to achieve commitment. The processes listed below occurred in approximately the following sequence:

1. Identifying internal structures to guide team and member behavior.
2. Specifying desired member behavior or output.
3. Pressuring member(s) for commitment to desired behavior or output.
4. Monitoring desired member behavior or output for commitment.
5. Monitoring team status, sometimes in relation to external structures.

The first process began at the beginning of the project and in most of the subsequent tasks. Numbers 2-5 usually occurred multiple times within each episode and in approximately the same cyclical fashion. To summarize, the commitment approach of team 2 emphasized specifying, pressuring, and

monitoring member commitment to (and completion of) desired behavior or output.

The key sequence of processes that characterizes team 3's approach is specifying, monitoring and pressuring commitment, and then monitoring and pressuring compliance for desired behavior and output. The processes listed below occurred approximately as follows:

1. Identifying internal structures to guide team and member behavior.
2. Identifying external structures and adopting them as standards to guide team and member behavior.
3. Specifying desired member behavior or output.
4. Monitoring desired member behavior or output for commitment.
5. Monitoring team status.
6. Pressuring member(s) for commitment to desired behavior or output.
7. Monitoring desired member behavior or output for compliance.
8. Pressuring member(s) for compliance.
9. Discussing firing a team member.

The first process happened at the beginning of the project. Numbers 2-5 occurred in cyclical fashion within episodes 2 and 3. Number 3-7 played an iterative role in episodes 4-6, with the significant addition of numbers 8-9 in the final episodes. To summarize, the approach of team 3 emphasized specifying, pressuring, and then monitoring both member commitment to and compliance with desired behavior or output. Over the course of the project, the emphasis among active

members remained commitment, while they focused more on compliance from inactive members.

The sequence of control processes, which are summarized in Table 5.3, suggests two observations about control. First, the order of pressuring and monitoring may have differed under these approaches. Team 1 monitored then pressured until compliance was achieved. Team 2 pressured then monitored to build commitment for the desire behavior or output. Team 3 was less patterned, but they did increase the amount of pressure before each of their chat meetings (where participating members would then monitor by discussing who had not attended). Second, teams 1 and 2 maintained similar sequences across episodes, while team 3 adapted over time. This finding seems consistent with teams 1 and 2 each reporting relatively constant levels of control at the middle and end of the project, while team 3 underwent a dramatic increase.

5.3. CHAPTER SUMMARY

This chapter identified several processes involved in control enactment in global virtual teams. Team processes of control and monitoring included specifying, pressuring, termination, team monitoring, and member monitoring. Contributing processes and structures included specifying, team structures, external structures, external monitoring, and external specifying. Taken together, team processes and their sequencing suggested that the teams took different approaches to control. The meaning of these results are discussed in the next chapter.

Chapter 6: Discussion

This chapter interprets the results of a study of control enactment in three global virtual teams. First, I discuss how these global virtual teams enacted control by integrating the results in a process model. Section 6.1 describes the model, illustrates the model with an example, and discusses the findings in light of relevant literature. Second, to add depth to this discussion, the chapter also examines one concept from the model in greater detail. Section 6.2 focuses on member monitoring due to the challenges associated with observing behavior in global virtual teams.

6.1. TOWARD A PROCESS MODEL OF CONTROL ENACTMENT IN GLOBAL VIRTUAL TEAMS

This study began with the research question: *How is control enacted in global virtual teams?* As explained in the conceptual background (see chapter 2), the essence of this question requires attention to process – to the unfolding events that give rise to control in this context. As such, I propose a process model to integrate the results about control enactment in global virtual teams. The results chapter (see section 5.1) describes team processes for control and monitoring as well as contributing processes and structures; I build on these findings to identify the core concepts of the process model. The results chapter (see section 5.2) also examines the use of these processes and structures over time and across teams; I draw upon these findings to define two key sequences of the process model – compliance and commitment.

In this chapter, I propose that the configuration and sequence of team processes for commitment differ from the configuration and sequence of team processes for compliance. For expositional simplicity and due to the significant overlap in the concepts involved, I refer to *one* process model that has two potential sequences: a compliance sequence and a commitment sequence. The first section below provides an overview of the model, explaining the purpose and logic of the model in addition to introducing the concepts and sequences. The second section illustrates the model with an example, and the third section triangulates these findings with relevant literature.

6.1.1. Model Overview

This section explains the purpose and logic of the process model, then introduces the core concepts and key sequences found in the model.

Purpose and Logic of the Model

As used in literature on organizations as well as information systems, process models help us theorize about *how* something we want to understand (e.g., control) develops over time. “A process model attempts to explain the occurrence of an outcome by identifying the sequence of events preceding it” (Shaw and Jarvenpaa, 1997: 71). In this way, a process model identifies the conditions that are necessary for a particular outcome to occur (Markus and Robey, 1988). In the current process model, the core concepts and key sequences explained below consider outcomes and sequences related to control in global virtual teams.

More specifically, this process model summarizes the iterative, control-related team processes of the three global virtual teams examined in this study; this purpose suggests a few boundaries and limitations of the model that should be recognized at the outset. First, the primary emphasis in this discussion is on concepts and relationships involving *internal team processes*. As I will further discuss below, this choice is appropriate conceptually and methodologically. Recent control literature tends to emphasize structural mechanisms instead of processes; this study complements that body of literature by focusing on processes. Methodologically, the archival nature of the data provided more complete data on processes than structures. There were fewer opportunities to understand how team members thought about structures and, therefore, what effects these structures had on behavior. Nevertheless, the role of team structures as well as external processes and structures are recognized, just not emphasized. Second, the model examines *iterative* team processes; only those internal team processes that reflect an ongoing pattern of control enactment are included as concepts and sequences in the model. This choice is helpful conceptually because the resulting theory is appropriate to a broader range of events; the model may also be more valid because the concepts and sequences are grounded in multiple observations per team rather than isolated events. Lastly, while the discussion below asserts that the concepts and sequences in the model are consistent with the three global virtual teams examined, the model may not be comprehensive in that it may not reflect the way other global virtual teams enact control. The

conclusion chapter (see chapter 7) further elaborates on the contributions and limitations of the process model and the study, in general.

It also helpful to be explicit about the logic and assumptions that underlie a process model (Van de Ven and Poole, 1995). As such, I describe this model of control enactment as a *teleological* theory of development and change: “A teleological model views development as a cycle of goal formulation, implementation, evaluation, and modification of goals based on what was learned by the entity. This sequence emerges through the *purposeful social construction* among individuals within the entity (Van de Ven and Poole, 1995: 520, emphasis added).” Teleological models have three conditions for operation (525):

1. An individual or group exists that acts as a singular, discrete entity, which engages in reflexively monitored action to socially construct and cognitively share a common end state or goal.
2. The entity may envision its end state of development before or after actions it may take, and the goal may be set explicitly or implicitly. However, the process of social construction or sense making, decision making, and goal setting must be identifiable.
3. A set of requirements and constraints exists to attain the goal, and the activities and developmental transitions undertaken by the entity contribute to meeting these requirements and constraints.

Each of these conditions is met in the proposed model, although the first condition suggests that the model may be less applicable to highly fragmented teams that conflict over goals and do not jointly attempt to enact control. As such, the underlying assumption of the model is that purposeful social construction among team members provides the motor that drives the observed sequences.

Next, I introduce the core concepts of the process model.

Core Concepts

Building on the findings in the results chapter, this section defines and describes the core concepts of the process model; this discussion groups the concepts into four sets. The first three sets – internal team processes, external processes, and structures – are simply groupings of the processes and structures described in the results chapter (see section 5.1). The fourth set – focal outcomes – is added in this section. Each set of concepts is described briefly below, emphasizing the particular relevance of the concept to the model. See Figure 6.1 for a graphical depiction of the concepts in the model.

First, *internal team processes* are the central events related to control enactment that occur in the model; these include team monitoring, member monitoring, specifying, and pressuring. Specific events that provide examples of these team processes include noting which members had or had not contributed their subtasks (monitoring), proposing norms for communication frequency (specifying), and urging a team member to attend a chat meeting (pressuring).

Although these team processes are developed in the results chapter, three differences should be noted. To maintain simplicity in the presentation of the model, I use higher-order concepts (e.g., pressuring) rather than the detailed concepts (e.g., pressuring for commitment, pressuring for compliance). These more detailed concepts may still have important implications for understanding control and monitoring (see the discussion of member monitoring in section 6.2). In addition, because the stated purpose for the model is to summarize recurring patterns of control enactment, I have excluded termination of team members from

the model. Voluntary termination was an occasional response to control, and involuntary termination was not an important component of the ongoing effort to exert control in these teams. Lastly, the higher-order concept of specifying is an aggregation of processes listed in the results under control and contributing internal processes. The rationale for this is the underlying commonality of specifying a desired behavior or output that can be monitored and pressured, whether it is explicitly control-related (e.g., deadline) or not (e.g., team chat meeting).

Second, *external processes* between members and outside parties include external monitoring and external specifying that occur across team boundaries. Specific control-related events that provide examples of external processes include the Coordinator reminding the team of a deadline and the team reporting participation problems to the Coordinator. Because the results suggested that external processes have the potential to impact control, they are included in the model. However, the focus of the model is internal team processes, leaving the development of the external processes portion of the model to future research (see chapter 7 for further discussion of this limitation and future opportunity).

Third, *structures* include those structures initiated by the team or externally; these include features of the task and organizational environment, technology, and team that are common to all members as well as local or member characteristics to which distributed team members are differentially exposed. Examples of structures that contributed to control include deadlines imposed by the Coordinator and norms established by team members. As noted above,

structures are not emphasized in the model; they are only considered to the extent that they impact internal team processes.

Finally, *focal outcomes* are team or member behaviors or outputs that are desired by one or more team members. Examples of focal outcomes include the team's timely submission of the preliminary research report or a member's attendance at a chat meeting. Although this concept was not explicitly introduced in the results chapter, it was still clearly represented. Focal outcomes are revealed in members' effort to specify, monitor, and pressure to achieve desired behavior or output. As such, focal outcomes are important to the team members enacting control and are, therefore, a significant aspect of the model.

The next section turns to the relationships, or key sequences, in the model.

Key Sequences

Drawing upon the sequences identified for each team in the results chapter (see section 5.2), this section proposes two key sequences of events for the process model; in general terms, the internal team processes are related sequentially as follows. First, members monitor the team as a whole, identifying needs or undesirable states by comparing the current situation to standards drawn from salient structures. A member, for example, might suggest that they need to hurry because a deadline is only a few days away. Second, when team monitoring reveals the need for action, teams engage in specifying (e.g., assigning new subtasks, scheduling a chat meeting) to involve and organize team members. Next, often in an iterative fashion, teams monitor members' completion of desired actions ('I received your part') and pressure members to complete those actions

(‘we need to receive your part soon’). Specifying, pressuring, monitoring, and the structures themselves shape which outcomes are deemed important (e.g., attendance at a chat meeting) and how those outcomes unfold (e.g., whether or not people actually attend). These focal outcomes then begin a feedback loop that restarts team monitoring activity; iterations in the model allow control to gain more precision over time as well as to transition to new tasks or activities.¹

In the current study, these internal team processes did not occur in one fixed sequence within and across teams; however, the results suggest two common patterns that are slight variations of the general sequence just described. These patterns may be linked to the control approach used within a team at a given time (see section 6.1.3 for further discussion of commitment and compliance). That is, teams emphasizing compliance enacted one set of internal team processes following one general sequence (see Figure 6.2) while teams emphasizing commitment enacted a slightly different set of processes in a slightly different sequence (see Figure 6.3). Both sequences begin with team monitoring and specifying. Then, in the compliance sequence, member monitoring and then pressuring occur in an iterative fashion while awaiting the desired outcome. In the commitment sequence, pressuring follows specifying, then member monitoring may occur repeatedly while awaiting the desired outcome. These statements do not preclude a team from using both sequences at different times in the project.

¹ Although this explanation emphasizes internal team processes, external processes such as monitoring and specifying may also contribute to this cycle. For example, external monitoring by a supervisor may prompt the internal monitoring among team members that begins this cycle.

6.1.2. Illustrating the Model

This section offers one example to illustrate the model. In episode 4, team 1 completed the task plan and status report. This episode shows several sequences of events that are consistent with the compliance approach to control; I review key aspects of the configuration of processes and structures, then the sequences of team processes.

First, in its team monitoring, team 1 identified and adopted external structures to guide team behavior. At the beginning of the episode, MA noted that the task plan "should be ready on Wednesday and I can't do anything then – the whole day is already booked." She then recommended that they complete the task by Tuesday. As they drew closer to the task plan deadline, MA noted the GVT deadline for the status report was Friday ("...we should have already started working with it. And if status report will be late we will lose points!!! So that has to be finished in time."). Compliance with external deadlines was a salient motivation in team 1 communication.

Second, specifying began with attempts to define the process they would use to complete the task plan, including suggestions to use the bulletin board and chat room. After attempting and failing to hold a chat meeting, specifying centered on desired output from teammates (e.g., comments from AO or HR; AO to summarize and submit the task plan). As team 1 approached the task plan deadline without receiving comments from AO, MA then revealed her desire for additional control structures to guide team and member behavior. MA wrote the following in her draft of the status report:

And we have to set also other goals than just the final deadline. We have to divide this job into smaller pieces that will have deadlines of their own. That way we'll avoid the situation where one had thought of making his/her part on the last day and the others have to wait for that to proceed.

In other words, she wanted them to identify subtasks and deadlines for the business plan to prevent what was currently happening with AO on the task plan from occurring again in the business plan task.

Third, team 1 used member monitoring and pressuring in combination to reinforce compliance with desired behavior (e.g., checking the task instructions) and output (e.g., responding to MA about the process to accomplish the task; AO to add comments to the bulletin board; AO to submit task plan). For example, just after the failed chat meeting, MA pressured AO through the listserve and the bulletin board, "Add your comments as soon as possible."

Lastly, the events involving team processes are generally consistent with the compliance sequence of the control enactment model. Table 6.1 illustrates five full iterations of the team monitoring, specifying, member monitoring, and pressuring sequence that included shorter iterations of specifying, member monitoring, and pressuring in between. While all of these events were not in the proposed order, the sequence of the processes is generally consistent with the compliance sequence.

The next section further discusses the concepts and sequences in the model by comparing and contrasting to relevant literature.

6.1.3. Triangulating the Model with Relevant Literature

To clarify the unique contributions and attributes of the model, this section compares and contrasts the control enactment process model with relevant

literature on control. The section first discusses control as a process and then considers how team members enact control through commitment and compliance.

Control Enactment as an Iterative, Adaptive Process

The control enactment model emphasizes the processual nature of control. This section draws upon my findings and relevant literature to suggest that control enactment in non-routine tasks is both an iterative and adaptive process.

Control Enactment as an Iterative Process – The sequences in the control enactment model reveal that control is an iterative or recurring process. These purposeful, goal-directed actions are arguably similar to cybernetic conceptions of control theory (e.g., Flamholtz et al., 1985), which feature iterations of goal-setting, measuring achievement, comparing achievement to goals, feedback, and corrective action (Hofstede, 1978). Components of the cybernetic control process are represented within the specifying (goal-setting), monitoring (measuring achievement, comparing achievement to goals, and some feedback), and pressuring (some feedback) processes of the control enactment model.² Furthermore, the control enactment model, by conceptualizing both internal and external processes and structures, parallels applications of cybernetic control theory to self-regulating entities within open systems (Flamholtz et al., 1985; Tsui and Ashford, 1994).

At the same time, the control enactment model displays some important differences from cybernetic conceptions of control theory. While cybernetic

² Some corrective action may occur within the focal outcomes portion of the control enactment model; however, these concepts serve different purposes in their respective models. Furthermore, the motivational versus informational nature of the feedback in the cybernetic model would dictate if it is more similar to monitoring or pressuring in the control enactment model.

control theory is only applicable to recurring tasks with pre-existing standards (Green and Welsh, 1988; Hofstede, 1978), the control enactment model does not assume a recurring task, and the internal and external specifying processes provide a mechanism for the creation of new standards or expectations for behavior. Furthermore, cybernetics tends to emphasize that elements of the cybernetic process should be performed by different people (Hofstede, 1978) leading to emphasis on a controller-controllee relationship; the control enactment model allows for control to be enacted among multiple members of the collective. Finally, cybernetics has additional boundary conditions – output must be measurable and feedback must be usable for corrective action (Green and Welsh, 1988; Hofstede, 1978) – that are not evident in the control enactment model.

In reaction to the limitations of cybernetics, scholars have either attempted to narrow the conceptualization of control to those situations where cybernetics would be appropriate (Green and Welsh, 1988) or to jettison the conceptual foundation of cybernetics altogether (Jaworski, 1988; Kirsch, 1997; Merchant, 1988). In the first interpretation, control would be considered irrelevant to much organizational work, including most virtual team projects. Under the latter interpretation, control as an iterative process is largely obscured by emphasis on structures, such as control mechanisms and modes. The control enactment model provides a third alternative: to pay attention to the process of control without accepting the limitations of cybernetics. What the critics of cybernetics may be recognizing is that control for non-routine tasks must also be adaptive.

Control Enactment as an Adaptive Process – Control enactment for a non-routine task is necessarily adaptive. Whereas a cybernetic conception of control applies to situations where the task, context, and process are essentially fixed, control of a non-routine task must adapt to changes in task, context, and process (see Kirsch, 1996 for consideration of complexities related to controlling non-routine tasks). Here, the global virtual teams in this study relied on trial and error as well as routines to make adaptations to control.

Members used trial and error to attempt and then adapt control. A vivid example can be seen in team 3's efforts to get members to attend chat meetings. DE initially stressed the importance of the meetings and the need for members to "sacrifice" to attend. After a few meetings where attendees lamented the absence of their teammates, DE began to pressure attendance: "When could we chat ALL (I said AAAALLLLLL of us) again?" In their next meeting, JN suggested that the unfavorable local times of the meetings were the cause of the absences, so DE and JN rescheduled meetings at different times to see if other members would attend. After those attempts were unsuccessful, DE tried more intense pressuring: "I hope E-V-E-R-Y-B-O-D-Y will be there (you know what I mean and who I am talking about)." Since EO resigned in response to this message and DL continued his inactivity, DE and JN determined that the other members would not help ("it's effectively just you and me!"), and they stopped attempting to get DL involved in the meetings. While this example illustrates an unsuccessful control outcome, it also shows how members attempted to adapt control to achieve desired outcomes.

Also, teams relied on routines to adapt control. One finding from this study is that continuity in routines is necessary to maintain control (see section 5.2.2 of the results). When team 2 varied from the way they had previously specified chat meetings and confirmed their intentions to attend, they experienced two chat failures. Team 1 relied on MA in initial tasks to specify the way they would accomplish the task and a schedule of activities. However, when MA had trouble identifying tasks and deadlines for the business plan, team 2 went an extended period in episode 5 with little direction for the team. In essence, these routines, once established, became necessary for the ongoing functioning of the team. Jarvenpaa and Leidner (1999) made similar observations about reliance on routines in the global virtual teams they studied.

The next section further examines the control enactment model by considering commitment and compliance.

Control Enactment through Commitment and Compliance

Building on the results about control enactment over time and across teams (see section 5.2), the control enactment model suggests that teams differ in their approaches to control. In particular, teams rely to varying degrees on commitment and compliance, as seen in the configuration and sequence of processes used by the team. In team 1, the compliance approach to control emphasized monitoring external structures, specifying desired behavior, monitoring for compliance, and then pressuring for compliance. In team 2, the commitment approach to control emphasized monitoring internal team structures, specifying desired behavior, pressuring for commitment, and then monitoring for

commitment. Team 3 showed a combination of these behaviors, emphasizing commitment between active members and compliance to inactive members. This section relates these findings to relevant literature on control.

First, the underlying distinction between commitment and compliance approaches to control is similar to the modes of control (i.e., formal behavior control, formal outcome control, informal clan control, informal self control) that have dominated the control literature over the last few decades (e.g., Cardinal, 2001; Eisenhardt, 1985; Jaworski, 1988; Kirsch, 1996; Ouchi, 1977; Snell, 1992). Formal control stresses *compliance* with specified behaviors or outcomes. Informal control, whether enforced by an individual or a collective, emphasizes *commitment* to shared values or norms.

Second, the current findings are unique in suggesting that both the configuration and sequencing of processes are relevant to the type of control. In defining control modes, the literature seems to suggest that the different control modes are associated with completely distinct processes and structures that are used under different conditions. For example, monitoring is featured prominently in formal behavior control (and possibly self control) but not in the other control modes. Possibly because the literature emphasizes the contextual conditions that would lead to the use of each control mode, less attention is given to the underlying processes and structures themselves. The control enactment model, with its emphasis on processes and structures, may provide a beginning point to suggest that some processes and structures may be shared across control modes.

In addition, the sequencing of these processes may also be important in differentiating approaches to control.

Third, like the current study, the control literature has more recently begun to explore how control modes and mechanisms are used in combination. Kirsch (1997) asserted that controllers assemble a portfolio of both informal and formal control mechanisms. In this study, team 3 suggests that teams may pursue both commitment and compliance.

One final consideration is to understand why the three teams in this study enacted control in the ways that they did. Kirsch (1997) proposed that task characteristics, role expectations, project-related knowledge and skills, and the availability of pre-existing control mechanisms contribute to control enactment. Although the causality is difficult to establish conclusively, the task, context and availability of pre-existing control mechanisms were virtually identically for each team in this study, so it is unlikely that these factors could explain the observed differences. The more likely explanation is that attributes of the members (e.g., project-related knowledge and skills, role expectations) and how they interacted impacted whether the team chose mechanisms for compliance, commitment, or both. Unlike much of the control literature that emphasizes task and context as determinants of control (e.g., Eisenhardt, 1985; Jaworski, 1988; Ouchi, 1977; Snell, 1992), this dissertation suggests that more attention needs to be given to how controllers make appropriations of the task and context to enact desired control mechanisms.

Having introduced and illustrated the overall control enactment model, the next section examines the specific concept of member monitoring.

6.2. MEMBER MONITORING

This section explores the results related to one portion of the process model in greater detail. The difficulty of gathering information about the behavior of people at other locations has been recognized in literature on virtual teams (e.g., Cramton, 2001) as well as control (e.g., Kirsch, 1996). The first section below examines how teams monitored member behavior and the implications of this monitoring for control. The second part examines the concept of behavior observability from the control literature in light of this study.

6.2.1. Member Monitoring and Control

Tracking, Interpreting, and Transmitting Member Status Information

With individual team members in different locations and constrained communication media options, team members could not physically see other members as they worked. As such, the context constrained members to essentially one type of observation of their peers – inspection of electronic artifacts such as textual communication and work products. Of course, members observed their own personal behaviors, so they could seek or share this otherwise private information with one another. Categorized by the focus (output or behavior) and observer (self or teammate), several actions related to member monitoring are identified and described in Table 6.2 (see section 5.1.2 of the results for examples of member monitoring).

By combining observations with known contextual information (e.g., local time of another member) and making other assumptions, members attempted to interpret observations, draw inferences about behavior, make attributions about motivations, and evaluate member and team performance. In addition, members occasionally publicly discussed their observations, interpretations, attributions, and evaluations among themselves or with the GVT Coordinator, their faculty sponsors, or peers outside of the team. For example, members of team 3 who attended chat meetings always discussed the status of those members who had not attended the meeting.

Connection to Control

Monitoring made several contributions to control enactment in the cases studied. First, monitoring generated information (e.g., history of member participation) that could then be used for control purposes (e.g., selecting an appropriate response to lacking member participation and assessing the subsequent effectiveness of the control behavior attempted). This is consistent with the notion that monitoring, although conceptually distinct from control, serves as an “information system” that enables the use of control (Kirsch, 1996; Eisenhardt, 1985). Second, public monitoring (i.e., monitoring that is “visible” to the one(s) being monitored) may have impacted behavior more directly. Monitoring actions, such as noting which members had (or had not) completed a specific responsibility, may have increased the salience of focal behaviors, possibly increasing the likelihood that those behaviors would be carried out. This suggestion is consistent with experimental findings that monitoring, in and of

itself, has an effect on behavior beyond its link to subsequent controlling action such as feedback (Larson and Callahan, 1990). As an extension to this second point, monitoring may have contributed to the creation of a team environment that could shape member behavior. For example, team 2 began in the first episode by “waiting” for communication from the last member of the team. Consistent public monitoring creates the impression that work is taken seriously and that contributions from members are expected; it is this type of setting in which “concertive control” is made possible (Barker, 1993 and 1999).

At the same time, member monitoring in this context also had limitations with potential for negative consequences. Monitoring often could not completely resolve uncertainty about member behavior or provide the information desired to guide subsequent action. Monitoring, on occasion, precipitated behavior that was potentially damaging to member relationships and team well-being, sometimes as the result of false or negative interpretations, attributions, and evaluations. For example, monitoring may have contributed to the ‘confusion’ that led to the failure of team 1’s first chat attempt (HR explained: “I check the e-mail [S]aturday around 4:00PM and believe that you did not read it, so I did not check mine on [S]unday morning.”). This example suggests that HR became confused about what he was monitoring; he incorrectly thought he was observing his teammate’s behavior, as clarified next.

Monitoring Behavior versus Output

One issue that complicates member monitoring in global virtual teams is the need to differentiate between behavior and outputs such as electronic artifacts.

Electronic artifacts, strictly-speaking, are not behaviors; they are outputs of member behavior. Behaviors in this context include: trying to log-in to the team website or chat room; seeking technology access or to resolve technical problems; checking email; thinking about, searching for, writing, and editing ideas; composing and sending communication; and creating or editing documents, spreadsheets, or other files. Electronic artifacts include textual communication (e.g., email, listserve, and bulletin board messages; chat room entries) and work products (e.g., web pages; files posted in the file sharing or through other channels).

Electronic artifacts differ in how closely they can be linked to behavior. First, some output may only become available after a temporal lag. Asynchronous email messages are observed when the receiver checks messages, not usually the instant the message was actually sent. Even entries in chat meetings can be delayed over global distances, as experienced in team 3. Second, artifacts cannot convey complete information about behavior. Some cues available from output provide unambiguous evidence that behaviors occurred (e.g., an email message received from a teammate was definitely sent), while remaining silent about other important details (e.g., how much time and effort was exerted to provide comments on my proposal?). Such a conclusion should not be surprising in light of theories of media richness (e.g., Daft and Lengel, 1986) that recognize the limited capacity of technologies to carry some cues. Third, the creation and transmission of output may not be fully determined by behavior. The fact that I have not received your proposal might not mean that you have not

written something and attempted to send it to me. However, herein lies the dilemma, what is the appropriate role of monitoring silence? Certainly, one message might become lost, but is it necessary to withhold judgment when few messages have been received over a longer timeframe? Jarvenpaa and Leidner point to a scenario where "...any member could reemerge and blame his absence on technological problems (1999: 809)." At what point, if ever, is it reasonable to assume for control purposes that electronic artifacts accurately approximate behavior?

The next section takes a closer look at the ability to gather and interpret information about behavior.

6.2.2. Behavior Observability and Control

Behavior observability is the ability to gather information about behavior (including contextual conditions). Given the emphasis on observation of behavior in both the control and global virtual team literatures, this section discusses observability and its relationship to control in these global virtual teams. In the absence of physical observation of team member behaviors, teams still attempted to gather, interpret, and transmit status information about member behaviors.

Before describing the findings, this section presents examples from episodes in team 1 to illustrate issues related to observability:

- Episode 2 – MA reminded the team that their website use was visible externally ("they are watching how active we are.."). HR assumed MA's behavior prior to the failed chat meeting.

- Episode 3 – MA proposed sharing interim versions because it would be “helpful to see what you’ve done.” HR did not follow her request, but he began to give updates on his own behavior.
- Episode 4 – On the task planning questions, MA expressed a belief in the ability to observe behavior (“I’m sure we would notice if one of wasn’t doing anything”). In her exit survey, MA stated that AO “got lost for several days” during this portion of the project.
- Episode 6 – Team 1 described AO’s behavior in the “firing” memo. They could not open the file AO sent; as such, AO “did nothing” for the business plan.

The sections below elaborate on these and other examples of factors that impact observability and control.

Information Systems

Behavior observability is enabled and constrained by properties of the particular “information systems” employed; however, the ability to gather information is not determined strictly by technology characteristics. Table 6.3 suggests several “information systems” that could support member monitoring in global virtual teams. I have already discussed using output as a means to gather information about behavior. Teammates can also provide information about their own behavior or conditions; updates of this sort can be useful because the informant has complete access to behavioral and contextual information. For example, email updates provided by members about themselves (e.g., HR in episode 3 of team 1) can convey information that is not available from the

physical inspection of electronic artifacts. However, the informant may not know what information needs to be shared, may be unable to convey that information through available communication channels, or may not be willing to share accurate information. For illustrative purposes, I also hypothesized other information systems that did not exist in my data, but could very easily exist in other global virtual teams: personal observation (face-to-face), technological observation (surveillance camera), local informant (colleague who works next to the member), and distributed informant (other team member who has had contact with the teammate).

Observer Characteristics

In each of the cases, members made statements and took actions demonstrating the belief that they could observe at least some behaviors of their teammates. MA noted in episode 4 of team 1, “I’m sure we would notice if one of wasn’t doing anything.” DY in team 2 wrote: “At the end of the day, you are able to tell how much effort one puts in. (at the moment, I am happy the way my team are performing).” Aside from these general beliefs, characteristics of the person monitoring also impacted observability.

Clearly, behavior observability has a contextual component; a person comparing collocated and virtual work is likely to conclude that behavior in one context is more observable than in the other setting. However, behavioral observability also varies between individuals; that is, it is a feature of the controller in addition to being influenced by the task or context. Members apparently differ in the attributions and inferences they draw and the ways that act

upon this information. Individual beliefs about observability influence what people “see” and whether or not they feel “watched.” This conclusion is comparable to the distinction Kirsch (1996) drew between task programmability (a feature of the task) and knowledge of the transformation process (a property of a controller for a given task).

Members differ in their beliefs about the amount of monitoring that is necessary or possible and the confidence that should be placed in the information gleaned from monitoring versus the trust placed in other teammates. In a discussion in the chat room, DE made strong personal attributions about EO’s lack of participation, while JN attributed EO’s behavior to the unreasonable local time for the chat meetings. The second consideration is that monitoring occurs in a team context, so public monitoring is inevitably shaped by the characteristics and actions of one or a few members. Jarvenpaa and Leidner’s (1999) study of trust in global virtual teams can be reinterpreted to illustrate these points. The case descriptions of the high and low trust teams both offer examples of monitoring; what appears to differentiate these incidents is the negative or distrustful tone taken in particular by the “leader” of the lower trust teams. While there were undoubtedly objective differences in group participation and initiative, monitoring and the attributions, evaluations, and actions taken in response to monitoring played an important role in the development of group relationships.

Specification of Expected Behavior and Output

Specification of expected behavior and output can alter the availability and interpretation of information through information systems. MA in episode 3 of team 1 wrote that she was searching for information and:

...felt that I might not be doing it right.. Do you think it would be good if we all would upload our plans/documents to the 'file sharing' no matter how drafts they are? I was thinking it might be helpful to see what you've done and how you've started with your work. I have mainly copy-pasted information from the web and I haven't really found too much of RELEVANT information. I just thought it might be easier if I could check your drafts once and a while to see what kind of documents you're writing....

While this practice was not adopted for the task suggested, it was used extensively in all of the subsequent tasks. By reconstructing the means of sharing task information, members could alter which information system they used to monitor. That is, shifting behavior from informal progress reports to sharing drafts moves the observation from indirect observations of behavior (what the person says they are doing) to direct observations of behavioral outputs (what I observe the person has produced). Similarly, in team 3, compliance with the chat meeting norm was unambiguous and was not impaired by lack of visual observation. If you logged into the meeting, you were in compliance. Efforts to specify expected output enable the team to monitor and pressure that output.

History and Relationships

Observability, when set in a historical, relational context, has the potential to change over time. As team members collaborate, they develop expectations and perceptions about the patterns of other team members. In episode 4 of team

3, DE and DL discussed in a chat meeting their concerns about the absence of EO and JN. DE commented that it was “odd” that JN was not there based on his prior contributions, but they expressed more concern about EO due to his infrequent participation.

It may be particularly difficult for external managers or peripheral team members to process this information. After the Coordinator helped DL with a problem with his email account, DL informed his team members that the technology problem was the reason for his participation problems. DE sent a message to the Coordinator, possibly to verify DL’s story, but the Coordinator did not understand from the content or context of the message that DL had inappropriately blamed his participation problems on the technology. As an outsider, the Coordinator was not aware of the sequence of events that made DE’s message salient. As another example, in the virtual team studied by Majchrzak et al. (2000), supervisors observed “work-in-progress” electronic artifacts in the team’s public electronic workspace but interpreted them as an “end result that lacks quality.” The history and relationships among team members provide context that make interpretations more viable.

Existing literature recognizes that interpreting observations can be error-prone due to the mutual knowledge problems articulated by Cramton (2001): failure to communicate and retain contextual information, unevenly distributed information, difficulty communicating and understanding the salience of information, differences in the speed of access to information, and difficulty

interpreting the meaning of silence. This problem may be even more severe for external managers that interact with the team.

Behavior Observability and Control

To summarize, the basic argument I make from the data is that observation is indeed constrained by cues made available (or not filtered out) by available information systems. Interpretations of observations – what one believes can be or has been observed – are not similarly constrained. This provides the basis for saying that cues are relatively fixed by the currently available information systems while observations are situated in beliefs and relationships that may change over time.

Implicitly, the definition of behavioral observation is altered in this view; it is expanded to include communication about work, work artifacts or by-products, and interim outputs or measures. These types of observation enable what previously might have been associated with output control (e.g., review of “output records” in Ouchi and Maguire, 1975) to be used for purposes of behavioral control (e.g., review of interim work products) (Orlikowski, 1991).

6.3. CHAPTER SUMMARY

This chapter interpreted the results presented in the previous chapter. I discussed how global virtual teams enact control through processes and structures and presented a process model for control enactment. The discussion of the model differentiates between compliance and commitment, considering both the configuration and sequence of processes involved. Second, the chapter examined

member monitoring in greater depth to understand behavior observability in the global virtual team context. The next chapter addresses limitations and contributions of the study.

Chapter 7: Conclusion

This chapter summarizes the limitations of this dissertation and identifies opportunities for future research. Also, this chapter reviews implications of the dissertation for research and practice.

7.1. LIMITATIONS AND FUTURE RESEARCH

This section presents limitations of the research study, then considers two areas for future research: (a) outcomes and responses to control and (b) implicit and explicit structuring.

Limitations of the Study

The study is subject to a variety of limitations. I examine limitations of the study's design (e.g., student subjects) and analysis (e.g., one researcher), considering their impact on the validity and generalizability of the findings as well as the opportunities for future research that the limitations reveal.

Design – Some general limitations are considered before moving to the issue of student subjects in particular. First, I consider the nature and conditions of the teams. The study employed ad hoc, work groups with no prior team history and a short-term expected team life. These characteristics reflect the desired conceptual domain, but may limit the generalizability to zero-history groups because teams with some history often display different group processes (Mennecke et al., 1992). The teams were also small in size, beginning with four members and finishing with two or three active members. This may limit the

generalizability to very small virtual teams. In addition, the teams had no pre-imposed roles or team structures and were influenced by an external coordinator that imposed deadlines, offered task clarifications, and provided periodic reminders. Some research suggests that the presence of a facilitator may inhibit the development of leadership within an ad hoc group (Mennecke et al., 1992), suggesting that the research may not be generalizable to all ad hoc groups.

Second, some potential limitations of the study concern the use of student participants. The participants averaged three years of full-time work experience, with almost half having no or very limited work experience. As such, many of the participants probably lacked experience with control in traditional organizational contexts. Implications of this feature of the participants are considered at greater length below. In addition, many participants had little experience with key aspects of the task (e.g., writing a business plan, electronic commerce). A lack of task experience may limit understanding of how to fit control to the task; however, this is a somewhat common occurrence in organizations, especially with novel tasks. An additional feature of the participants was generally higher levels of experience with the types of communication media employed in the study. This may or may not have contributed to greater understanding of how to adapt control to the media, but the participants were probably a better reflection of the technical skill levels that will be present in organizations in the near future.

Even if the participants perfectly reflected the desired organizational member characteristics, additional limitations involve the context in which the

participants operated. As students in a classroom project, the participants may have perceived some aspects of the experience as imaginary or unreal and, consequently, may have engaged in behaviors relevant to control that would differ from their normal actions under less simulated conditions. For example, the mid-project survey and the task planning exercise may have induced extra or different control behaviors as the participants tried to respond to the interests of the coordinator. Of course, comparisons can be made to similar attempts to please superiors in organizations, but this does not remove the basic concern. In addition, while students were evaluated and assigned grades based on their participation and contribution, there still were relatively limited personal consequences or local pressure to perform well on the team. Participants were not subjected to long-term reputational effects in their local relationships and did not have to implement or otherwise “live with” their solutions. This situation may occur in real-world projects, but this feature of the study may limit the contexts to which the findings apply. Taken together, these limitations about the context or situation do not eliminate the ability to study control behaviors, but they may limit interpretations about what may be considered natural control behaviors in specific virtual contexts.

One of the more serious concerns noted above is that many participants were probably inexperienced in enacting control in more traditional organizational contexts. While this could have little to do with their control behaviors in virtual contexts, the low experience with virtual teams in the sample suggests that the participants either needed to improvise control behaviors or to

import them from previous non-virtual experiences. In prior research, a controller's role expectations and project-related knowledge and skills have impacted the selection of existing control mechanisms and the addition of new control mechanisms (Kirsch, 1997). Kirsch discussed a case where a controller lacking experience with global projects struggled to define effective control mechanisms (232). Although Kirsch emphasized knowledge of the transformation process (i.e., task), knowledge about how to fit control mechanisms to the task could also be an issue for inexperienced controllers. Because this stream of research on the selection of control mechanisms is normative (i.e., types of control should be enacted under certain conditions), it is possible that inexperienced controllers may be more likely to choose inappropriately.

Since the research literature says little else about specific potential implications of inexperienced controllers, speculations are offered at this point. First, those with less traditional control experience might make fewer attempts at control in the virtual context because (a) they do not see the need for or the benefits of control (i.e., not having role expectations that include enacting control) or (b) they might lack the knowledge or skills that would enable them to attempt control. Second, inexperience might change the range or number of control options attempted. On the one hand, the inexperienced might consider fewer options because they lack the examples and experience upon which to design control. On the other hand, they may consider more options because their less established ideas about control may permit more creativity in enacting control,

especially in a new context where previous methods may be difficult to apply. Beyond the range of options, inexperience may have biased the participants to prefer some more familiar methods (e.g., social control or peer pressure) over those less familiar (e.g., formal control such as procedures or subtask schedules). Some of this may have been countered in those teams that received the control intervention and/or that had members with more diverse control experiences. Finally, inexperience might have hindered (or enhanced) some participants' ability or willingness to perceive and accept the control that was attempted in the team. Taken together, the potential lack of traditional control experience in some participants could limit the number and types of control attempts and their subsequent usefulness to the teams. This could make it more difficult to find control enactment in the teams, but it does not negate the study of those control behaviors actually observed in the data.

As such, the data contain attempts to learn control behaviors in general (especially from those inexperienced in control) and in the virtual team context more specifically (for almost all of the participants). Since the purpose of the study is to build theory on control enactment in a virtual context, I do not believe that presence of less experienced controllers is a grave weakness for the study. If anything, it might create a larger variety of behaviors from which theory can be developed. In any case, control behaviors could be studied in the future with more experienced controllers on global virtual teams with a different set of features than those considered in the present study.

Analysis – Due to resource constraints, I served as the Coordinator of the GVT Exercise as well as the investigator. While this role overlap provided greater opportunity for exposure to the phenomenon of interest, it also allowed me to shape the context in which the teams operated and to influence the actions and experiences of participants. Although this effect is likely to have commonality across groups and participants, I attempted to maintain sensitivity to the impact of my actions in the Coordinator role when performing the analysis (e.g., by examining external control processes related to the Coordinator's actions). Furthermore, it is possible the analysis and interpretations are idiosyncratic to me as a single researcher. I attempted to limit this weakness by integrating my findings with the literature, using multiple sources of evidence, and by describing and presenting the method and analysis in greater detail.

The next suggestion builds on limitations related to the scope of my study to identify opportunities for future research.

Control Outcomes and Responses

Several issues related to outcomes of control or responses to control were not addressed in this study, providing opportunities for future research. The study did not connect control enactment to team outcomes such as performance. Since control's link to positive performance has been questioned, particularly in settings with high uncertainty (e.g., Goold and Quinn, 1990; Wheatley, 1992), examining the outcomes of control would be valuable in the context of virtual teams. Next, this research did not theorize about specific effects of external control on virtual teams because there was little diversity in the external environment. In varying

degrees, each of three teams adopted external structures (e.g., task instructions, deadlines, evaluation policies) as guides for team behavior. Future research that examines teams from a more diverse set of external environments could theorize about external control of virtual teams.

Also, this study did not examine how members' experience control in virtual teams or their response to control. As such, a psychological view of control in virtual teams remains to be explored: "Control comes from the knowledge that someone who matters to us is paying close attention to what we are doing and will tell us if our behavior is appropriate or inappropriate" (O'Reilly and Chatman, 1996: 161). Whether or not members experienced something they would call control, they reported some control in their survey responses, and several members were quick to admit when they had violated a team expectation (e.g., apology by PO in team 2; RA evaluating herself as a "very bad teammate" in team 2). In team 1 survey comments, MA described her efforts to "kick AO for several days" for comments; AO said MA "was quite unfriendly and even rude with me, because she did want the tasks to be done very fast." The need to understand the experience of control in virtual teams is a research opportunity as well as how members respond to control. Research on control in other contexts recognizes that control is never complete or easily accomplished, since workers resist efforts to be controlled (Prasad and Prasad, 2000). What happens, for instance, when the difficulty of monitoring due to distance and technology effects is compounded with workers efforts to resist monitoring and control? Having recognized several limitations of the study with regard to

member and team control outcomes and responses, I now elaborate on more specific ideas to explore in future research.

Future research could explore the content and context of processes and structures teams enact for control purposes to see how they are related to member's experience of control. The current study primarily emphasized *content* relevant to exerting control (i.e., words that convey monitoring or pressuring meaning); however, this only explains the "sending" side of control. The question of whether structures (e.g., norms, routines, roles, etc.) enact control through *context* is more challenging. Some of these structures are overtly reflected in the form of the communication (e.g., participation in chat meetings; sending a draft work product). Both in the panopticon in a prison setting (Foucault, 1976) and concertive control in collocated, self-managing teams (Barker, 1993), participants develop the perception that their behavior may be observed and evaluated at any moment. Beyond any direct experience of influence from others (content), participants may begin to self-regulate based on the knowledge that they may be held accountable for their behavior (context). Spears and Lea (1994) develop similar arguments to explain contradictory findings about status effects and minority influence in computer-mediated communication. Future research could explore how members of virtual teams experience control from both content and context.

Future research could also examine which members are likely to respond to control. In the current study, control did not impact all team members in the same ways. In a sense, it was only those who committed to the team that became

subject to its control. Barker drew a similar conclusion for self-managing teams practicing concertive control: "...uncommitted workers do not last in the concertive system. Concertive workers must invest a part of themselves in the team: they must identify strongly with their team's values and goals, its norms and rules (1993: 436)." While Barker examined collocated teams from one organization, the boundary-spanning and partial time-commitment nature of the current cases seemed to expedite opting in or out of the team.

Implicit and Explicit Structuring

A final limitation of the study is that it pays less attention to structures than to processes. Although both were considered, structures were only considered to the extent that they were referenced in team processes. As such, the formation of structures such as norms received some attention, but additional consideration is recommended for future research. Here, I use an example from this study to highlight the need to consider implicit and explicit structuring (Yates et al., 1999) in research on both control and virtual teams.

One difference between the three teams was whether or not the teams gave explicit attention to the formation and continuation of its structures. The teams developed some of their structures implicitly as an action spawned a pattern of behavior and created or revealed expectations for behavior. The teams created or altered other structures more explicitly through discussions of a specific norm, routine, or role. Although this description sounds dichotomous, implicit and explicit structuring represent a spectrum from no overt consideration of the structure by anyone on the team to intense deliberations over its creation and

operation among all members. Both types of structuring were used to develop and subsequently change structures in each team. Chat meetings are discussed as an example.

While each team attempted to hold chat meetings, only two teams made the meetings a routine. Team 1 abandoned chat meetings after two failed attempts (“no more chat after this, OK?”). Team 2 exchanged several messages to schedule and then confirm each of its 3 chat meetings; they mentioned chat in at least half of their listserve messages. After two failed chat attempts, team 3 conducted 17 chat meetings logging over 50 hours of elapsed meeting time; only two members participated in each meeting.

Unlike team 1 which abandoned chat, teams 2 and 3 began with the stated expectation that chat meetings would be a regular practice (team 2: we need to schedule our “first meeting”; team 3: “ICQ [chat tool] is going to help us a lot”). Team 2 displayed a lot of excitement and enthusiasm when planning their first meeting. This expectation, combined with the reaction to the failed meetings, preceded team 3’s continued effort to schedule meetings while team 1 resorted to other means of collaboration (exchanging iterative versions of working documents). These stated expectations may have reflected higher individual commitment and/or increased individual effort due to public commitment. Team 3 attempted peer pressure to encourage chat participation, with limited increases in coordination effort.

Yates et al. (1999) developed this distinction between implicit and explicit structuring in their examination of communication genres. While not framed in

these terms, other research on teams also recognizes that norms and routines can form with or without explicit discussion among members (e.g., Feldman, 1984; Hackman, 1976). One assumption of these discussions is that explicit discussions are always better for teams. For example, Spich and Keleman (1985) created a procedure to promote “explicit norm structuring” at the inception of a group. However, as Bettenhausen and Murnighan (1985) imply in their consideration of differences among member scripts and perceptions, there may be some situations in which a team does not have enough common experiences for an explicit discussion to be useful. Global virtual teams may be more likely to experience these situations due to their diversity and lack of common history and context, suggesting the need for additional research.

The next section identifies the implication of the study.

7.2. IMPLICATIONS

This section explains the implications of this dissertation for research and practice.

Implications for Research

The objective of this research is to contribute to theory by explaining how control is enacted in global virtual teams. This section identifies contributions and potential theoretical implications related to virtual teams and control.

Virtual Teams – The motivation in chapter 1 implies that researchers too quickly dismissed the possibility of control in global virtual teams without examining their assumptions about control and monitoring. The current study

provides evidence that control is possible in global virtual teams by identifying processes (e.g., specifying, pressuring, termination, team monitoring, member monitoring) and structures (e.g., deadlines, norms, routines, meetings) involved in control enactment. For example, researchers might look for control behaviors that occur before a synchronous virtual team meeting that build commitment for (or stress compliance with) meeting attendance. Also, findings related to member monitoring suggest that monitoring can occur in virtual teams that rely solely on electronic communication. Through this study, I update the virtual team literature to reflect the control literature's view of behavior observability; that is, information about behavior can come from a variety of "information systems", not just direct physical observation (Eisenhardt, 1985; Kirsch, 1997). I hope this study will encourage other researchers to examine the control and monitoring processes and structures at work in global virtual teams and potentially other virtual forms.

Control – The motivation in chapter 1 also identified opportunities to contribute to theory on control by examining global virtual teams. First, this study identified processes and structures used by peers within the team to enact control. Although the specific processes and structures are not theoretically important beyond providing evidence of control in peer-based relationships, the findings suggest that the configuration and sequence of these team processes may have meaning. They apparently reveal the team's approach to control – compliance, commitment, or a combination of the two. Prior group research (e.g., Gersick, 1988; Hare, 1976; Tuckman, 1965) has not recognized this diversity in

approaches to control, while existing control research (e.g., Kirsch, 1997) has not made a connection between sequences of processes and control approaches.

Second, this study examines the process of how control is enacted in non-routine tasks. Although the assumptions of cybernetic control theory (e.g., routine task, outcome measurability) would be violated in such a context, this dissertation proposes a process model of control enactment in global virtual teams. Beyond important similarities, the control enactment model differs from cybernetics because it includes a means for modifying the task or situation; that is, the model includes a process for specifying expected behavior or output that would include broader changes than simple goal-setting. Future research could examine the generalizability of the model to other virtual and non-virtual settings.

Third, this study elaborates on the concept of behavior observability (Eisenhardt, 1985; Kirsch, 1996 and 1997) by examining the monitoring of distant team members who were constrained to electronic communication. The findings suggest that the availability of behavioral information is constrained by properties of the information system used to collect it; however, the interpretations of these observations – what one believes can be or has been observed – is not similarly constrained. Unlike prior research, behavior observability is not strictly a feature of the context; it is situated in beliefs and relationships that may change over time.

Finally, a more specific implication of the monitoring findings is the importance of distinguishing between behavior, output, and outcomes. Behavior control and outcome control have been distinguished in the literature by what is observed (behaviors versus outputs/outcomes), the timeframe necessary to gather

these observations (there is usually some delay between behaviors and outcomes), and the focus of control (behaviors or outcomes). The examination of member monitoring suggests that outputs such as electronic artifacts can be used to enable behavior control in some instances. In addition, the data suggest that outputs can be iterated in short enough cycles that control over outputs at times functions as behavior control. As such, some of the traditional distinctions between behavior and outcome control appear blurred. One solution to this problem is to separate the type of data (behaviors, outputs, or outcomes) from the type of control. Outputs and outcomes could be distinguished so that outputs flow more directly from behaviors while outcomes are often dependent on other significant factors (e.g., a prospect list could be the output of a salesperson's cold calls, while sales are outcomes generated by salesperson activity and customer response.). Outputs could then be used for behavior or outcome control, but outcomes would only be relevant to outcome control.

The next section turns to the more practical implications of the study.

Implications for Practice

Before applying the findings to practice, more research is desired to replicate and extend these findings and to connect the findings to outcomes for teams and members. Assuming the findings hold and appropriate benefits are found, practitioners may want to initiate training for managers and members of virtual teams related to the issues below. First, managers and members of virtual teams need to carefully consider their observations of distant others. Am I “seeing” the person's exact behavior, output that is closely tied to behavior, or an

outcome that is influenced by factors beyond their behavior? Particularly as external managers observing teams, observers need to remember that they may not understand the flow of information or events to make informed interpretations (e.g., see Majchzrak et al., 2000). To avoid some of the negative attributions associated with mutual knowledge problems (Cramton, 2001), those monitoring others have to interpret carefully and suspend evaluation until more information is gathered. Second, managers and members of virtual teams may want to specify behaviors and work processes that make work more “visible.” Expectations to attend chat meetings, post recent versions of work products for public access, and submit specific output by deadlines make it more obvious when expected behaviors have not occurred, providing an opportunity to inquire about behavior. Participants may also want to develop routines that encourage updates about personal behavior or remind members of work to be performed. Third, manager and members of virtual teams may be able to select an approach to control, rather than waiting to see what evolves. This choice may be closely connected to the role expectations and project knowledge and skills of key team members and leaders assigned to the project. Finally, given that the teams in this study were unable to achieve total control over their members, managers and members of team members should still consider how to foster individual commitment and trust among participants.

7.3. CHAPTER SUMMARY

This chapter summarized the design and analysis limitations of this study and identified opportunities for future research on virtual teams, particularly related to control outcomes and responses and implicit and explicit structuring. The chapter also highlighted the implications of this dissertation for research and practice. This theory-building research proposed a process model of control enactment in global virtual teams and refined the concept of behavior observability to better account for monitoring among members of virtual teams.

Tables

Table 2.1 – Key Features of the Literature on Virtual Teams

Citation (Type)	Level of Analysis (LA) Causal Agency (CA) Logical Structure (LS)	Inputs/ Structures (I/S) Processes (P) Outcomes (O)	Control Assertions
Cramton 2001 (qualitative)	LA: Group, Subgroup CA: Emergent? LS: Process-oriented framework	I/S: Group design; technology; task P: Communication & mutual knowledge O: Performance; team relationships	No explicit control assertions; however, theoretical base and findings are highly relevant to monitoring. Finds that a lack of mutual knowledge – “knowledge that the communicating parties have in common and know they share” – may lead to failures in information exchange and interpretation and contribute to causal attributions that harm group cohesion.
Furst, Blackburn, & Rosen 1999 (conceptual)	LA: Group CA: Technological imperative LS: Research questions extending Hackman’s effectiveness model	I/S: Organization context; group design; group material resources P: Group synergy; group process O: Effectiveness	“Reduced visibility” may lead to different behaviors by team members that then require different modes of evaluation, such as peer-based evaluation. Members need to observe how others interact to form group norms. However, “In many virtual contexts, it is nearly impossible for virtual team members to actually observe those behaviours used to establish informal rules or norms ... Thus, new approaches may be necessary in virtual settings to expedite the formation of team norms (258).” Cultural differences may also obstruct the formation of norms. Propose research question: “How do norms develop in virtual teams?”
Jarvenpaa & Leidner 1999 (qualitative)	LA: Group CA: Organizational imperative LS: Propose early & late communication form trust	I/S: Group design; technology P: Communication O: Trust	Groups that finished with high trust made a successful transition from a procedural to a task focus. “The emphasis on procedures, such as on how often to check email, helped to provide an illusion of certainty, but in the absence of any mechanism to enforce the rules or even monitor the other members’ compliance any member could reemerge and blame his absence on technological problems.”
Jarvenpaa, Knoll, & Leidner 1998 (quantitative)	LA: Group, Individual CA: Technological imperative? LS: Temporally-based trust hypotheses	I/S: Group design; technology P: Communication O: Trust	“[T]he global virtual context renders other forms of social control, such as direct supervision, inoperable. Second, other factors known to contribute to social control and coordination, such as geographical proximity, similarity in backgrounds, and experience, are often absent.” Suggests that future work examine how norms emerge and how they are enacted.
Knoll and Jarvenpaa 1998 (qualitative)	LA: Group CA: Emergent LS: Descriptive	I/S: Group design; technology P: Collaboration; socialization; communication O: Cohesiveness	Teams developed task approaches, milestones, document structures, and norms to support collaboration. Members directed pressure at out-group members who violated participation norms.
Lipnack & Stamps 1997 (conceptual)	LA: Group, Org. CA: Organizational imperative LS: No formal propositions	I/S: Team design; technology P: Leadership; communication; cooperation O: Performance; trust	Points to the diminished role of traditional authority to suggest that a common purpose should guide a virtual team. Bureaucracies, with their rules, regulations, and procedures, derive authority from organizational hierarchy, but members of virtual teams may not share a common hierarchy.
Majchrzak et al. 2000 (qualitative)	LA: Group, Org. CA: Emergent LS: Model of adaptation process over time	I/S: Organization, group, & technology structures P: Appropriation & adaptation of structures O: Feasible project solution	Depicts changes in the way the team interacted with external managers as well as the team leader. The external changes involved starting and then stopping external managers’ monitoring of internal group communication and work products. Also, the team leader reported that he “missed being in control” after internal changes that promoted more direct collaboration among members, rather than through the team leader. The authors tied this internal change to the eventual “breakthrough solution.”

Table 2.1 – Key Features of the Literature on Virtual Teams (continued)

Citation (Type)	Level of Analysis (LA) Causal Agency (CA) Logical Structure (LS)	Inputs/ Structures (I/S) Processes (P) Outcomes (O)	Control Assertions
Maznevski & Chudoba 2000 (qualitative)	LA: Group CA: Organizational imperative LS: Propositions on communication & temporal patterns	I/S: Technology; organization; task; group P: Technology appropriation; decision processes O: Decision quality; cohesion; commitment	Routine meetings provided a rhythm or structure that enabled effective teams.
McDonough, Kahn, & Barczak 2001 (quantitative)	LA: Org., Group CA: Organizational imperative LS: Propositions on group design and performance	I/S: Group design; technology P: Trust O: Performance	Proposed that global (virtual) teams have more behavior and management challenges than virtual or collocated teams and, consequently, experience lower performance.
Montoya-Weiss, Massey, & Song 2001 (quantitative)	LA: Group, Individual CA: Technological imperative LS: Hypotheses on conflict's impact on performance	I/S: Technology; temporal coordination mechanisms P: Conflict O: Performance	No explicit control assertions. Proposed temporal coordination mechanisms as a process structure to help virtual teams manage conflict.
Olson & Olson, 2000 (review, conceptual)	LA: Group CA: Organizational imperative LS: No formal propositions	I/S: Distance; task coupling; collaboration & technology skills P: Common ground O: Trust	"Remote work is reorganized to fit the location and technology constraints."
Townsend, DeMarie, & Hendrickson 1998 (conceptual)	LA: Org., Group CA: Organizational imperative LS: No formal propositions	I/S: Technology, team design, member training P: O: Trust, cohesion	"Because of the dispersion of team members, effective supervision and control of the virtual team may appear problematic. However, the virtual team's rich communicative environment, along with the system's capacity for archiving data and communications, actually empowers considerably more managerial monitoring than is possible in traditional environments. Managers could, for example, actually view archived recordings of team meetings to assess member contribution and team progress." "[T]he reporting relationship and administrative relationship between the team and its external manager or managers must be clearly established." "[C]lear schedules must be established."
Warkentin, Sayeed, & Hightower 1997 (quantitative)	LA: Group CA: Technological imperative LS: Hypotheses about impact of technology	I/S: Technology P: O: Cohesion, satisfaction	"The traditional methods of control and influence that we are socialized to utilize as children may not be effective in computer-mediated environments. Users of [computer-mediated-communication systems] must exercise leadership and influence with little means of social control, and some members may become "lost in cyberspace" and may "drop out" of virtual teams in the void of familiar communication patterns (989)."
Weisband 2001 (quantitative)	LA: Group CA: Organizational imperative LS: Hypotheses about process & leadership	I/S: Technology P: Awareness; pressure; assessing member behavior O: Performance	Describe group processes and mechanisms to create awareness of other members' behavior. They also examine the impact of leadership behaviors of pressuring and assessing member behavior and when those occur in the project.

Table 3.1 – Participant Demographics

Category	Mean (Standard Deviation)
Age	26.5 years (6.4 years)
Full-time work experience	3.4 years (5.7 years)
Sex	70 % male / 30% female

Table 3.2 – Reasons for Transitions to New Episodes

Episode	Team 1	Team 2	Team 3
2	A, B, C	A, C	A, C
3	A	A	A
4	A	A, D	A
5	A, C	D	A, C
6	B	Not applicable	C

Key – Episode differs from the immediately preceding team episode due to a change in:

- A. task or activity.
- B. who attempts to influence.
- C. how influence is attempted.
- D. response to influence.

Table 3.3 – Primary GVT Task or Activity During Episode

GVT Task or Activity	Team 1	Team 2	Team 3
• Greeting	1	1	1
• Personnel Selection	2		2
• Preliminary Research	3	2	3
• Task Planning I/ Status Report	4	3	4
• Task Planning II			5
• Business Plan	5-6	4-5	5-6

Table 3.4 – Concepts in the Coding Scheme and Results

Concept	Coding Scheme	Results
PROCESSES		
Team Control	Structuring	Specifying: Team structure Termination: Resignation Termination: Firing
	Pressuring	Pressuring: Compliance Pressuring: Commitment
Team Monitoring	Team Monitoring	Team Monitoring: Structures Team Monitoring: Status
	Member Monitoring	Member Monitoring: Teammate behavior & conditions Member Monitoring: Self behavior & conditions Member Monitoring: Output Member Monitoring: Evaluation
Contributing Internal		Specifying: Team process Specifying: Team structure
	Technology Appropriation	
	Coordination	
	Production	
Contributing External	External Specifying	External Specifying
	External Monitoring	External Monitoring: Upward External Monitoring: Downward
STRUCTURES		
Team-Initiated		Meeting
	Subtask	Subtask
	Deadline	Deadline
	Guide	Guide
	Norm	Norm
	Routine	Routine
	Role	Role
External	Task & Organization	Task & Organization: Instructions Task & Organization: Deadline Task & Organization: Evaluation criteria
	Technology	Technology: Email/Listserve Technology: Bulletin/File Sharing Technology: Chat
	Member & Local	Member & Local: Time zone Member & Local: Outside commitments

Table 4.1 – Team 1 Episodes: Processes, Structures, and Outcomes

Episode	1 Greeting	2 Personnel Selection	3 Preliminary Research
Dates	2/28 – 3/2	3/3 – 3/6	3/6 – 3/16
Control (Internal)	(no public activity)	Call to action, based on GVT schedule & grading criteria. Stated desired deadline for personnel task.	Mild pressure from MA in the form of repeated monitoring & coordination. Set flexible interim schedule, then fixed final deadline.
Monitoring (Internal)	(no public activity)	Compared team's task progress to GVT requirements & schedule. Made assumptions about, inquired about, or explained member behavior.	MA gave 4 updates & interim versions and inquired about the timing of output. HR made 3 updates. Deadline reminders.
Technology Appropriation (Internal)	All interaction through listserv.	Bulletin board for production; all else through listserv. Chat meeting failed.	Interim versions in file sharing; all else through listserv.
Coordination (Internal)	Recognized potential teamwork obstacles.	Scheduled chat meeting. Assigned subtasks.	Proposal to share interim versions of member output. Assigned subtasks.
Production (Internal)		Members posted rankings & resolved differences.	Individual research on countries compiled for team submission.
External Processes	Coordinator provided instructions.	All members reported CN's absence, after Coordinator's request.	Coordinator reported CN's withdrawal & reminded of task deadline. AO explained why they did not chat.
Team-Initiated Structures		MA proposed meeting, subtasks, & schedule.	MA initiated subtask assignments & schedule.
External Structures	Time zones.	Website use impacts grading. Task requirements & schedule.	Task deadline impacts grade.
Outcomes	3 members made contact.	Task completed.	3 official members. Task completed.

Table 4.1 – Team 1 Episodes (continued)

Episode	4 Task Plan/ Status Report	5 Business Plan Early	6 Business Plan Late
Dates	3/16 – 3/24	3/24 – 4/9	4/9 – 4/19
Control (Internal)	Discussed team norms & rules (favored “trust” over peer evaluations). Pressured via repeated requests for contribution. Identified need for subtask deadlines for control of business plan task. Set deadline for draft.	Encouragement to be “active next week.”	Some pressure in coordination & monitoring. Removed AO from team.
Monitoring (Internal)	Tracked task completion against deadline. With sharing of interim versions, they noted member output and made updates & inquiries about member behavior.	Noted need to begin work on task. A few updates & inquiries on member output & behavior.	Noted open issues & deadline. Shared interim versions of individual subtasks. Noted member output and gave updates & evaluations of member behavior.
Technology Appropriation (Internal)	Discussed technology use expectations. Interim versions on bulletin board & listserve for all else. Chat meeting failed.	One file on bulletin board. Listserve for all else.	Interim versions of documents in file sharing, with file text & comments in various colors. Listserve for all else.
Coordination (Internal)	For task plan & status report: requested comments and scheduled chat meeting & subtasks. Discussed potential subtasks for business plan.	Requested deadline & subtask ideas. Members adopted subtasks & timing to fit their own schedules.	Assigned a few independent subtasks, but shared overall responsibility. Gave directives to comment on or address specific issues. Noted times when members would work.
Production (Internal)	Discussed task plan & business concept within interim versions. Drafted & revised status report.	MA posted 1 file of preliminary ideas. HR did research.	Discussed business concept & some interim versions of output. “Filled in” most plan sections iteratively.
External Processes	Coordinator noted member & team completion of research, encouraged focus on task plan, & reminded of deadlines.	Coordinator responded to status report & gave deadline reminder.	Coordinator reminded of requirements & deadline. Team reported reasons for “firing” AO.
Team-Initiated Structures	MA proposed chat meeting & initiated task plan subtask assignments & schedule. Target business plan draft date with subtasks. Rules & procedures for teamwork.	MA requested subtask & deadline suggestions.	Both MA & HR gave & received directives in addition to completing assigned subtasks. Used existing website & GVT business plan template as guides.
External Structures	Task deadline impacts grade. GVT peer evaluations. Local holidays & member schedules.	Task requirements & deadline impact grade.	Task & deadline impact grade. Team can remove members from the team. Member schedules.
Outcomes	Tasks completed.	Postponed task completion.	Task completed with 2 names on report.

Table 4.2 – Team 1 Processes: Change Matrix

Episode	1 Greeting	2 Personnel Selection	3 Preliminary Research	4 Task Plan/ Status Report	5 Business Plan Early	6 Business Plan Late
Dates	2/28 – 3/2	3/3 – 3/6	3/6 – 3/16	3/16 – 3/24	3/24 – 4/9	4/9 – 4/19
Internal						
Control		MA initiates.				HR assists MA.
• Structuring		Task deadline.	Subtask deadline.	Subtask deadline. Formalize norms.	No subtask deadlines defined.	Terminating AO.
• Pressuring		Motivate work.	Motivate sharing interim task output.	Pressure AO for task output.	Motivate future work.	Some pressure for subtask completion.
Monitoring		MA initiates.				HR assists MA.
• Team		Remind of deadline. Assess task progress.				Remind of deadline. Highlight open issues.
• Member Behavior		Inquire & update about project work. Assume privately.	Inquire & update about project work.		Inquire & update about competing commitments.	Inquire & update about competing commitments & project work.
• Member Output		Observe communication.	Share & observe interim task output.	Observe communication. Share & observe interim task output.	Observe prior task output.	Observe communication. Share & observe interim task output.
Technology Appropriation	Listserve.	Listserve with failed chat. Post content on website.	Listserve. Post interim files on website.	Listserve with failed chat. Post interim files on website.	Listserve. Post interim files on website.	
Coordination		MA proposes & adapts team process for task.			MA requests help to define business plan process.	HR & MA iteratively define business plan process.
Production		MA initiates; others follow.		MA initiates; HR develops content.		
• Subtasks		Public rankings.	Private research & public summary.	Public ideas for business concept & team process.	Private research.	Public content with some private development.
• Integration		Reconcile.	Compile.	Reconcile & edit.	(none)	“Fill in” & edit.
External						
• Specifying	Instructions.					
• Monitoring		Report “missing” member.	Deadline reminder. Report change in team membership.	Deadline reminders. Note completion of prior task.		Deadline reminders.
• External Structures		Deadline. GVT grading criteria.		Deadlines. GVT grading criteria. Peer evaluations. Ability to fire members.	Deadline. GVT grading criteria.	Deadline. GVT grading criteria. Ability to fire members.

Table 4.3 – Team 2 Episodes: Processes, Structures, and Outcomes

Episode	1 Greeting/ Define the Project/ Chat Meeting	2 Preliminary Research	3 Task Plan/ Status Report
Dates	2/28 – 3/12	3/13 – 3/16	3/17 – 3/22
Control (Internal)	Encouraged “effort” and action. Valued “suffering.” Set long-range business plan deadline.	Stressed importance of and encouraged others to attend the next chat meeting. Informed RA of response if preliminary research not received “soon.” Set deadline for task plan.	Motivated subtask completion & continuation of previous communication. Gave expectations for chat frequency, member communication, & “team effort.” Repeated request for communication.
Monitoring (Internal)	Clarified membership & key tasks. Reminded of chat meeting & schedule. Conveyed “waiting” for member communication. Updated, inquired about, & repeated information about member behavior or conditions.	Reminded of chat meeting and current & approaching deadlines. Noted missing & received member output. Updated about member behavior or conditions.	Complimented & expressed satisfaction with team. Reminded of chat meeting & deadlines. Inquired about & discussed RA. Updated about member behavior & conditions. Informed of & noted member output or communication.
Technology Appropriation (Internal)	Proposed, voted on, arranged access to, & held chat meeting. Favored regular chat use. Most communication via listserv with some file attachments.	Proposed use of chat for subgroups and posting task plan ideas on website. All communication via listserv with some file attachments.	Most communication via listserv. Chat meeting (log shared via listserv). Proposed & posted some output to file sharing. Set team communication expectations.
Coordination (Internal)	Began “process to define the project.” Scheduled chat meetings, reconciling time zone differences & members’ schedules. Skipped personnel selection. Exchanged guides for developing a business plan and proposed goals for finishing the plan.	Named a “coordinator.” Chat meeting rescheduled. Proposed process & deadline for completing task plan.	Chose business plan guide & example website to follow. Rescheduled chat meeting, and set the next one. Assigned subtasks to finish status report & finalize topic. Assigned subtask responsibilities & deadlines for the business plan.
Production (Internal)	Began considering business ideas.	Everyone except RA contributed, with some emphasis on the business idea. DY compiled & submitted the report.	Members drafted task plan & DY compiled. DY drafted & others approved status report. DY & GO developed business idea, and PO affirmed. RA made no contributions.
External Processes	Coordinator provided instructions and resolved technology problems.	Coordinator reminded of task criteria & deadlines and gave instructions to resolve potential technology problems.	Coordinator noted member (except RA) & team completion of research, encouraged focus on task plan, & reminded of deadlines. Status report noted concern about RA.
Team-Initiated Structures	Format for voting and monitoring. Proposed weekly chat meetings. Target date for business plan completion. Proposed guides to follow.	DY named “coordinator.” DY actively initiated monitoring, coordination, & control. Procedure for chat meeting. Format for chat reminder and monitoring.	DY as “acting” coordinator. Target completion dates. Format for voting & monitoring. Guides for developing idea & plan. Assigned plan sections to members. Communication expectations.
External Structures	Final team membership. Grading criteria & deadlines. Member’s time zones, other commitments, & technology access.	GVT task instructions & deadline. DY planned to complete research for local grading purposes. Member’s time zones, other commitments, & technology access.	Grading criteria (including local) & deadlines. Members’ time zones, schedules, other commitments, & technology access. English, as a secondary language.
Outcomes	All members contacted team & participated in chat meeting.	All members except RA contributed to preliminary research report.	Expressed satisfaction with team. All members except RA participated in tasks.

Table 4.3 – Team 2 Episodes (continued)

Episode	4 Business Plan Early	5 Business Plan Late
Dates	3/23 – 4/3	4/3 – 4/17
Control (Internal)	Motivated effort for new task, especially in response to RA's withdrawal. Suggested they "help" each other if they encountered problems covering RA's task assignments.	Committed to subtask deadline & DY encouraged completion. Repeated or added urgency to request for communication.
Monitoring (Internal)	Complimented team accomplishments. Reminded of planned chat meeting & noted 3 failed meetings. Updated about & self-evaluated member behavior & conditions. Informed of, noted, & "waited" for member output or communication.	Complimented & expressed satisfaction with team. Reminded of chat meeting, deadlines, & potential bonus points. Updated & repeated information about member behavior or conditions, including diagnosis of chat problems. Informed of, noted, & "waited" for member output or communication.
Technology Appropriation (Internal)	Most communication via listserve. Chat meeting failures – each member attended alone. Proposed standardized software use. Posted previous task to file sharing.	One chat meeting for coordination. Used listserve file attachments to share interim work products. Posted final version to file sharing. All other communication via listserve. Reminded others of continuing personal availability through email.
Coordination (Internal)	Discussed task requirements & examples to follow. Reassigned RA's subtasks for business plan. Amid communication problems, attempted to reschedule time & date for chat meeting.	Scheduled chat meeting, reconciling time zone differences & members' schedules. Set new subtask deadlines (twice) & added minor subtasks. Shared examples & advice for developing the business plan. Requested comments on drafts. Members shared plans for individual next steps.
Production (Internal)	Identified, shared & commented on articles for the marketing plan.	DY drafted and asked others to "gel" toward his business description. GO provided his section, and DY shared an interim version. With input from DY, PO provided his section. DY compiled, edited, & submitted the final business plan.
External Processes	Coordinator noted completion of status report, reminded of the grading criteria & deadline, inquired to RA about her participation, and reported RA's withdrawal to the team.	Coordinator encouraged completion of task planning update, clarified business plan requirements, reminded periodically of grading criteria & deadline, and congratulated upon plan submission.
Team-Initiated Structures	Continued mention of guides for the business plan. Reassigned RA's subtasks to other members.	DY initiated process of scheduling chat, directed chat meeting, & monitored plan completion. Target & revised completion deadlines for subtasks, draft, & final version. Format for listing & voting on chat meeting timing. Guides for developing plan. Stable subtask responsibilities with minor additions.
External Structures	Grading criteria (length, timing) & deadline. Members' schedules, other commitments, & technology access. RA's health.	Grading criteria (bonus points for timing), submission requirements, & deadline. Members' schedules, time zones, other commitments, & technology access.
Outcomes	Expressed satisfaction with team and concern over loss of RA.	All remaining members contributed to the plan, which was submitted 2 days early, and expressed satisfaction.

Table 4.4 – Team 2 Processes: Change Matrix

Episode	1 Greeting/ Define the Project/ Meeting	2 Preliminary Research	3 Task Plan/ Status Report	4 Business Plan Early	5 Business Plan Late
Dates	2/28 – 3/12	3/13 – 3/16	3/17 – 3/22	3/23 – 4/3	4/3 – 4/17
Internal					
Control	DY initiates; others reinforce.	DY initiates.	DY initiates. Others reinforce.		
• Structuring	Team values. Long-range bus. plan deadline.	Deadline for task plan.	Team values & norms. Deadline for bus. plan draft.	Team values & norms. RA withdrew.	Revised & added draft & subtask deadlines.
• Pressuring	Motivate chat attendance.	Motivate chat attendance. Mild pressure for RA's task.	Mild pressure toward RA to communicate.	Motivate work.	Mildly pressure contribution.
Monitoring	Several initiate.	DY initiates. Others respond.	DY initiates. Others reinforce.	Several initiate.	
• Team	Clarified membership & key tasks. Celebrated "team." Reminded of chat meeting.	Reminded of chat meeting & deadlines.	Complimented team. Reminded of chat meeting & deadlines.	Complimented team. Reminded of chat meeting.	Diagnosed chat failures. Complimented team. Reminded of chat meeting, deadlines, & grading criteria.
• Member Behavior	Updated, inquired, self-evaluated, & repeated (behavior or conditions).	Updated (behavior or conditions).	Updated (behavior or conditions). Inquired about & discussed RA.	Updated & self-evaluated (behavior or conditions).	Updated & repeated (behavior or conditions).
• Member Output	"Waited" for communication.	Noted task output.	Informed of & noted task output. Noted communication.	Informed of task output. "Waited" for & noted communication.	Informed of & noted task output. "Waited" for communication.
Technology Appropriation	Listserve, chat, & documents.				
Coordination	Schedule chat. Define process & guides for business plan.	Schedule chat. Manage immediate tasks. DY named "coordinator."	Schedule chat. Define process & guides for business plan. Manage immediate tasks.	Schedule chat. Define process & guides for business plan. Manage business plan task.	
Production	GO & DY initiate.		DY initiates; others respond.		
• Subtasks		Private research & public summary.	Public ideas for task plan & topic.	Shared guides for individual subtask.	Private work discussed or shared early.
• Integration	Discussed business plan topic & guides.	Compiled.	Compiled, chose idea, & DY prepared status.	Discussed guides.	Others "gel" to draft. DY edited & submitted.
External					
• Specifying	Instructions.				
• Monitoring		Deadline & grading reminders.	Deadline & grading reminders. Noted task completion, except RA. Reported RA in status.	Deadline & grading reminders. Noted task completion. Inquired & reported withdrawal.	Deadline & grading reminders. Noted task completion.
• External Structures	Deadlines. GVT grading criteria.		Deadlines. GVT grading criteria. Peer evaluations. Ability to fire members.	Deadlines. GVT grading criteria.	

Table 4.5 – Team 3 Episodes: Processes, Structures, and Outcomes

Episode	1 Greeting	2 Personnel Selection/ Missing Members	3 Preliminary Research	4 Task Plan/ Status Report
Dates	2/28 – 3/3	3/3 – 3/12	3/13 – 3/17	3/17 – 3/24
Control (Internal)	Shared individual values. Repeated & emphasized ICQ proposal.	Call to action, based on GVT schedule.	Set deadline for individual contributions just before GVT deadline.	Encouraged “sacrifice” to attend chat, even “if one of us can’t join the rest,” and work on the task plan.
Monitoring (Internal)	Noted which members had contacted team. Updated & reminded about member behavior or conditions. Listed team members.	Noted immediate schedule. Updated & reminded about member behavior & conditions. Noted EO’s lack of communication. Concern about inactive members.	Replied when EO & DL broke silence. Reminded EO of task deadline. Updated about member behavior. Requested, noted, & “waited” for output or comments. Complimented team.	Reminded of meetings & deadlines. Discussed task requirements & members missing chat. Noted output. Updated & inquired about member behavior, conditions.
Technology Appropriation (Internal)	Primarily used listserve. DE asked about and favored use of ICQ chat tool.	DE proposed use of bulletin board & chat for task. Used listserve, bulletin board, & direct mail. One chat failed.	Proposed uploading individual work to file sharing. Used file sharing, direct email, & listserve for coordination & production.	4 chat meetings for task “discussions” & relational. Used listserve & file sharing for all else. Shared chat log.
Coordination (Internal)	DE proposed they prepare by looking at business plans.	DE proposed process for personnel selection, then adapted after chat failure. JN requested that DE finalize.	DE instructed EO about how to get involved in the task. DL set individual plan. DE asked JN to assemble report; JN coordinated submission.	Scheduled chat meetings with short lead time. Chat members discussed then proposed process to others.
Production (Internal)	(no public activity)	Active members posted response. DE followed JN’s recommendation when preparing & submitting.	All worked privately, then shared results publicly. JN edited, expanded, requested comments on, & submitted report.	DE & JN drafted topic ideas. Discussed content in chat. Shared iterative versions with some feedback.
External Processes	Coordinator provided instructions.	After Coordinator request, DE & JN reported EO missing & asked for guidance. Coordinator directly contacted EO, who then made contact.	Coordinator clarified task & technology instructions & reminded of deadline. JN inquired about & Coordinator addressed report format.	Coordinator noted member & team research completion, encouraged focus on task plan, reminded of deadlines, & answered task question.
Team-Initiated Structures	(no public activity)	Communication procedure. Guide (time zone website).	Subtask deadline for preliminary research. JN coordinates & edits submission, due to language proficiency.	DE reminded team of next GVT deadline. Proposed chat norms (notice, participation) not always followed. Developed schedule for business plan activities.
External Structures	Final team membership. Members’ time zones, languages, holidays, technology access (ICQ) & other commitments.	GVT task instructions & schedule. Members’ time zones & other commitments.	GVT task instructions & deadline. Members’ time zones & languages.	GVT task instructions & deadlines. Chat room speed. Members’ schedules, other commitments, technology access, language, & faculty task assignment.
Outcomes	3 members made contact.	2 active members completed task; EO made first contact.	4 members contributed to timely task completion.	Timely task completion, noting some participation problems.

Table 4.5 – Team 3 Episodes (continued)

Episode	5 Business Plan Early	6 Business Plan Late
Dates	3/24 – 4/6	4/7 – 4/17
Control (Internal)	Intensely pressure missing members to attend chat meetings. Reactions to proposed chat norms.	Mildly pressured but decided not to fire DL. Recognized & reinforced in-group commitment. Pursued schedule for maximum bonus points, but adjusted when necessary.
Monitoring (Internal)	Reminded of meetings & deadlines. Assessed task progress. Discussed those missing chat. Noted & waited for member output. Updated, inquired, assumed, & evaluated behavior & conditions.	Assessed task progress in comparison to deadlines and requirements. Discussed DL missing chat. Informed of, noted, requested, waited for, & evaluated member output. Updated, inquired, assumed, & evaluated behavior & conditions.
Technology Appropriation (Internal)	4 chat meetings (1 failure) & file sharing enabled production. Also used listserve & direct email.	7 chat meetings (1 failure), direct email, & file sharing area enabled communication between DE & JN as well as sharing & editing work products. Retained & referred to prior chat logs. Used listserve primarily to interact with DL.
Coordination (Internal)	Scheduled chat meetings. Discussed ways to involve members. Assigned & volunteered for subtasks.	During chat: organized & scheduled chat meetings; clarified task requirements; assigned & volunteered for tasks based on skills & availability; and synchronized work production & file exchange. Through listserve: scheduled & announced chat meetings; DL asked how to help; and team requested feedback from DL.
Production (Internal)	Privately completed small subtasks. Extensively discussed guides & ideas. Shared iterative versions of content, jointly editing.	Privately completed small subtasks between meetings. Extensively discussed guides & ideas. Shared iterative versions of content, jointly editing.
External Processes	Coordinator noted status report completion; inquired about & responded to participation issues; & clarified task requirements.	Coordinator reminded of deadline & evaluation criteria. Upon request, Coord. clarified task requirements & resolved technology issues. Team reported DL missing “for grading purposes”; Coord. contacted DL. Team again reported DL to Coord. to request advice about including DL on the team and to determine if smaller team size would be factored into the evaluation. Team waited for & received confirmation about the submission and later the results.
Team-Initiated Structures	Guides (articles, companies, websites, GVT99 winner, template). Subtasks. Interim schedule. Format for scheduling chat meeting used occasionally.	Guides (articles, companies, websites, GVT99 winner, template). Small, immediate subtasks. Final, flexible deadline with countdown near deadline. Criteria for team membership.
External Structures	GVT task instructions, deadlines, & evaluation criteria. Chat room access & speed. Listserve reliability. Members’ schedules, time zones, other commitments, & technology access.	GVT task instructions, deadlines, evaluation criteria, peer evaluations, & policy for including or excluding a member. Local grading criteria. Chat room access & speed. Members’ languages, schedules, time zones, other commitments, & technology access.
Outcomes	Two contributing members plus one withdrawal and one inactive.	Submitted business plan early, but later than planned.

Table 4.6 – Team 3 Processes: Change Matrix

Episode	1 Greeting	2 Personnel Selection/ Missing Members	3 Preliminary Research	4 Task Plan/ Status Report	5 Business Plan Early	6 Business Plan Late
Dates	2/28 – 3/3	3/3 – 3/12	3/13 – 3/17	3/17 – 3/24	3/24 – 4/6	4/7 – 4/17
Internal						
Control		DE initiates.	DE initiates & JN implements.	DE initiates.	DE initiates with JN's assistance.	DE & JN collaborate.
• Structuring	Share individual values & expectations.	Task deadline, following GVT schedule.		Propose participation norms. Immediate & interim bus. plan deadlines.	Implicit reactions to proposed participation norms. Interim deadline.	Final deadline. Consider firing DL.
• Pressuring		Motivate work.	(no public activity)	Motivate work & chat attendance (sacrifice).	Pressure chat attendance.	Mildly pressure DL to attend chat & participate. Reinforce in-group commitment.
Monitoring	Active members.	DE initiates with JN.		DE initiates. Team discussions.	Active members initiate & discuss.	
• Team	Shares membership list.	Reminded of deadline. Assessed team.		Reminded of chat meetings & deadlines. Clarify task requirements.	Reminded of chat meetings & deadlines. Assessed task progress & team.	
• Member Behavior	Updated.			Updated & inquired.	Updated, inquired, assumed & evaluated.	
• Member Output	Noted.		Noted, requested, & "waited."	Noted.	Noted & "waited."	Informed, noted, requested, "waited", & evaluated.
Technology Appropriation	Listserve with desire for chat.	Listserve, bulletin board, & direct email. Failed chat.	Listserve, file sharing, & direct email.	Chat, listserve, & file sharing. Shared chat log.	Chat, file sharing, direct email, & listserve.	
Coordination	DE proposed activity.	DE proposed process, then DE & JN adapted.	DE privately proposed process. JN coordinated. Set subtasks.	Scheduled chat. Discussed & proposed process to others. Set subtasks.		Synchronized subtasks & production. Scheduled chat. Told process to DL.
Production		DE & JN initiate.	DE & JN initiate; others respond.	DE initiates; others respond.	DE & JN jointly initiate.	
• Subtasks		Public rankings.	Private research & public summary.	Public ideas for topic & task plan.	Small, short private subtasks.	
• Integration		DE reconciled, upon JN's request.	JN privately compiled & edited, then shared.	Subgroup chose & developed topic. Iteratively revised.	Subgroup discussed guides, developed content, & edited. Iteratively revised.	

Table 4.6 – Team 3 Processes (continued)

Episode	1 Greeting	2 Personnel Selection/ Missing Members	3 Preliminary Research	4 Task Plan/ Status Report	5 Business Plan Early	6 Business Plan Late
Dates	2/28 – 3/3	3/3 – 3/12	3/13 – 3/17	3/17 – 3/24	3/24 – 4/6	4/7 – 4/17
External						
• Specifying	General instructions.		General instructions & clarifications.			
• Monitoring		Team reports & Coordinator contacts “missing” members.	Deadline & grading reminders.	Deadline & grading reminders. Note task completion. Team reports “participation” problems in status.	Deadline & grading reminders. Note task completion. Coordinator inquired & received reports on participation.	Deadline & grading reminders. Members manage impressions for grading purposes. Coord. contacts DL & notes task completion.
• External Structures		GVT deadline.	GVT deadline & grading criteria.			GVT deadline, grading criteria, and policy for removing members.

Table 5.1 – Summary of Processes and Structures

Concept	Description
PROCESSES	
Team Control Processes	
Specifying: Team structure	Established structures (e.g., deadline, norm) for control.
Pressuring: Compliance	Exerted pressure on member(s) to perform specific behaviors.
Pressuring: Commitment	Encouraged member commitment to team (e.g., “effort,” “sacrifice”).
Termination: Firing	Discussed and/or decided to remove a member from the team.
Termination: Resignation	Member voluntarily withdrew during the project.
Team Monitoring Processes	
Team Monitoring: Structures	Drew attention to existing structures as standards for behavior.
Team Monitoring: Status	Tracked, interpreted, and transmitted team status information.
Member Monitoring: Teammate behavior & conditions	Assumed, inquired, or repeated information about a teammate’s unseen behavior or conditions.
Member Monitoring: Self behavior & conditions	Member personally updated or reminded team about his or her own unseen behavior or conditions.
Member Monitoring: Output	Noted teammate’s output (i.e., communication, work products).
Member Monitoring: Evaluation	Stated or discussed evaluation of an inactive teammate.
Contributing Internal Processes	
Specifying: Team process	Established one or more steps to accomplish task.
Specifying: Team structure	Established structures (e.g., chat meeting, team leader role, subtask assignment) to help the team accomplish the task.
Contributing External Processes	
External Specifying	Coordinator clarified instructions, deadlines, & evaluation criteria.
External Monitoring: Upward	Team reported the status of the team or a member.
External Monitoring: Downward	Coordinator drew attention to structures (e.g., approaching deadline) or monitored team or member status.
STRUCTURES	
Team-Initiated Structures	
Team: Subtask	Specific units of work or behavior expected from specific members.
Team: Deadline	Specific time for member/team to accomplish expected behavior.
Team: Guide	Example team can learn from or follow as they perform the task.
Team: Norm	Appropriate or expected behavior for a given situation.
Team: Routine	Functionally similar pattern of behavior in a given situation.
Team: Role	Configuration of behaviors expected from a specific member (e.g., team coordinator proposes subtasks and monitors task completion).
Team: Meeting	Pre-arranged, synchronous communication (e.g., chat meeting).
External Structures	
Task & Organization: Instructions	Task instructions listed on GVT website.
Task & Organization: Deadline	Deadline listed on GVT website.
Task & Organization: Evaluation criteria	GVT policies impacting grading (e.g., peer evaluations, measuring communication frequency, penalties for late submission).
Technology: Email/Listserve	GVT listserve or personal electronic mail.
Technology: Bulletin/File Sharing	Message board and file transfer capability on GVT website.
Technology: Chat	Synchronous chat tool on GVT website.
Member & Local: Time zone	Member’s local time.
Member & Local: Outside commitments	Member’s other school, work, or social responsibilities that compete for the member’s time or attention.

Table 5.2 – Processes and Structures by Team Episode: Intensity and Significance

Episode	Team 1						Team 2					Team 3					
	1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5	6
PROCESSES																	
Team Control Processes																	
Specifying: Team structure		x	x	X			X	x	X		x			x	x		
Pressuring: Compliance		x	x	X		x	x	x	x		x				x	X	x
Pressuring: Commitment		x			x		X	X	X	X	X	x	x		X	x	X
Termination: Firing						X											X
Termination: Resignation			x							x						X	
Team Monitoring Processes																	
Team Monitoring: Structures		X	X	X	x	x	X	X	X	X	X	x	X	X	X	X	X
Team Monitoring: Status		x	x	x	x	X	X	x	x	x	x		x	x	x	x	X
Member Monitoring: Teammate behavior & conditions		X	x	x	x	X	X		X	x	x				x	X	X
Member Monitoring: Self behavior & conditions		x	X	X	X	X	X	x	x	X	x	x	x	x	X	X	X
Member Monitoring: Output		x	X	X	x	X	X	X	X	X	X	x	x	X	X	X	X
Member Monitoring: Evaluation						X	x		x	x			x		X	X	X
Contributing Internal Processes																	
Specifying: Team process		X	X	X	x	X	X	X	X	X	X		x	x	X	X	X
Specifying: Team structure		x	x	X	x	X	X	X	X	X	X	x	x	x	X	X	X
Contributing External Processes																	
External Specifying	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
External Monitoring: Upward		x	x	x		x	x		x				X		x	X	X
External Monitoring: Downward		x	x	x	x	x		x	x	X	x		X		x	X	X
STRUCTURES																	
Team-Initiated Structures																	
Team: Subtask		x	x	x	x	x	x	x	X	x	X				x	x	x
Team: Deadline		x	x	x	x		x	x	x		x			x	x	x	x
Team: Guide						x	X		X	X	x		x			x	x
Team: Norm				X		x	x	X	X	x		x			x		
Team: Routine		x	x	x		x	X	X	x		x		x		x	x	
Team: Role		x	x	x	x	x		X	x	x	x			x			
Team: Meeting		x		x			x	x	x	x	x			x	X	X	X
External Structures																	
Task & Organization: Instructions	x	X	X	X	x	x	x	X	X	x	x	x	X	X	X	x	x
Task & Organization: Deadline		X	X	X	x	x		x	x	x	x		X	X	X	x	x
Task & Organization: Evaluation criteria		x	x	x	x		x	x	x	x	x					x	X
Technology: Email/Listserve	x	X	X	X	x	X	X	X	X	X	X	X	X	X	X	X	X
Technology: Bulletin/File Sharing		x	X	X	x	X	x		x	x	x		x	X	X	X	X
Technology: Chat		x		x			x	x	x	x	x	x	x		X	X	X
Member & Local: Time zone	x						X	x	x	x	x	x	x	x		x	x
Member & Local: Outside commitment				x	X	x	X	x	x	x	x	x	X		x	X	X

Notes:

x present in episode X present in episode with greater intensity
 Shaded value is particularly noteworthy for the case.

Table 5.3 – Sequence of Team Control Processes

<p>Team 1 (compliance)</p> <ol style="list-style-type: none"> 1. Identify external structures as standards 2. Specify behavior/ output 3. Monitor behavior/ output (focal event occurs here) 4. Pressure compliance 5. Monitor team 6. Repeat 2-5 within episode 7. Repeat 1-6 for each episode 8. Terminate team membership in last episode
<p>Team 2 (commitment)</p> <ol style="list-style-type: none"> 1. Identify internal values as standards 2. Specify behavior/ output 3. Pressure commitment 4. Monitor behavior/ output (focal event occurs here) 5. Monitor team (including external structures) 6. Repeat 2-5 within episode 7. Repeat 1-6 for each episode
<p>Team 3 (compliance and commitment)</p> <ol style="list-style-type: none"> 1. Identify internal values structures as standards 2. Identify external structures as standards 3. Specify behavior/ output 4. Monitor behavior/ output (focal event occurs here) 5. Monitor team 6. Repeat 3-5 within episode 2 7. Repeat 2-6 for episode 3 8. Identify external structures as standards 9. Specify behavior/ output 10. Pressure commitment 11. Monitor behavior/ output (focal event occurs here) 12. Monitor team 13. Repeat 8-12 within episode 4 14. Specify behavior/ output 15. Pressure compliance 16. Monitor behavior/ output (focal event occurs here) 17. Repeat 14-17 within episode 5 18. Terminate team membership (EO in episode 5) 19. Specify behavior/ output 20. Pressure commitment and compliance 21. Monitor behavior/ output (focal event occurs here) 22. Team monitoring 23. Discuss terminating team membership (DL) 24. Repeat 19-23 within episode 6

Table 6.1 – Events in Episode 4 of Team 1: Illustrating the Model

TM	S	MM	P	Summary/Outcome
+	+	+		MA noted GVT deadline and that she had outside commitments the day of the deadline. MA proposed process for the task, which included a chat meeting.
		+	+	After a day with no reply, MA asked if they had checked the website with the task instructions and encouraged them to “go check it.”
+	+	+		MA suggested posting comments on the bulletin board, noted that she had posted her comments there, and reminded of the deadline and her outside commitment.
	+	+		MA and AO proposed to chat, and MA announced that she was online waiting. A couple hours later, she announced that she “got fed up waiting.”
	+	+	+	MA then declared “no more chat”, noted that she had summarized the comments on the bulletin board, and asked the others to “add comments.
~	+			MA asked HR to clarify his comments and asked AO to summarize the task plan.
	+	+		Both HR and AO provided explanations for the chat failure and agreed with no more attempts.
		+	+	After 40 hours, MA again asked AO to provide his comments on the bulletin board.
~	+	+		MA drafted and posted the status report, in which she noted the need for deadlines to avoid members waiting until the “last day.”
				AO posted his comments on the bulletin board without notifying the others through the listserve.
	+	+	+	HR informed that he had revised his comments, asked AO to comment on the task plan, and also requested that AO submit the task plan.
		+		AO noted his comments were on the bulletin board and that he would provide comments to MA about the status report.
+	+	+		MA asked who was going to submit the plan; she could not do it.
	+	+		HR asked AO to submit the plan again; AO said “I’ve already done it.” Coordinator acknowledged receipt of the plan.

TM = Team Monitoring; S = Specifying; MM = Member Monitoring; P = Pressuring
+ present ~ implied

Table 6.2 – Actions for Member Monitoring

Focus	Observer	Action	Description
Output	Self	Inform	Announce sharing of output
	Teammate	Note	Report status of output (e.g., received or not received)
Behavior	Self	Update	Give information about unseen member behavior or conditions
	Teammate	Repeat	Remind teammates of information about unseen member behavior or conditions
		Inquire	Solicit information about unseen member behavior or conditions
		Assume	Make assumptions about unseen member behavior or conditions

Table 6.3 – Potential Information Systems in Monitoring Member *Behavior*

Information Systems	Informant	Context	Monitorer
<i>Monitorer gathers information and interprets.</i>			
Physical	<ul style="list-style-type: none"> • Not applicable 	<ul style="list-style-type: none"> • Distance or other obstructions 	<ul style="list-style-type: none"> • Knowledge of transformation
Technological	<ul style="list-style-type: none"> • Not applicable 	<ul style="list-style-type: none"> • Time lag between behavior & observation • Limited cues due to media properties (subset of behavior & environmental info) 	<ul style="list-style-type: none"> • Awareness of contextual limitations • Knowledge of transformation
Output (communication, work products)	<ul style="list-style-type: none"> • Not applicable 	<ul style="list-style-type: none"> • Time lag between behavior & output • Degree to which output is fully determined by behavior (tech. failure) • Limited cues due to media properties (subset of behavior & environmental info) 	<ul style="list-style-type: none"> • Awareness of contextual limitations • Beliefs about the observability of behavior • Similarity of output to focal behavior
<i>Informant gathers and shares information. Monitorer interprets.</i>			
Self	<ul style="list-style-type: none"> • Full access to behavioral & environmental information • Ability to identify & convey relevant information 	<ul style="list-style-type: none"> • Limited cues in which to convey information due to media properties (subset of behavior & environmental info) 	<ul style="list-style-type: none"> • Similarity of informant's information to focal behavior • Trust in informant
Local Informant (on-site)	<ul style="list-style-type: none"> • Possible access to additional behavioral & environmental information • Ability to identify & convey relevant information 	<ul style="list-style-type: none"> • Limited cues in which to convey information due to media properties (subset of behavior & environmental information) 	<ul style="list-style-type: none"> • Similarity of informant's information to focal behavior • Trust in informant
Distributed Informant (off-site)	<ul style="list-style-type: none"> • Possible access to additional behavioral & environmental information • Ability to identify & convey relevant information 	<ul style="list-style-type: none"> • Limited cues in which to convey information due to media properties (subset of behavior & environmental information) 	<ul style="list-style-type: none"> • Similarity of informant's information to focal behavior • Trust in informant • Awareness of contextual limitations

Figures

Figure 2.1 – Preliminary Conceptual Model

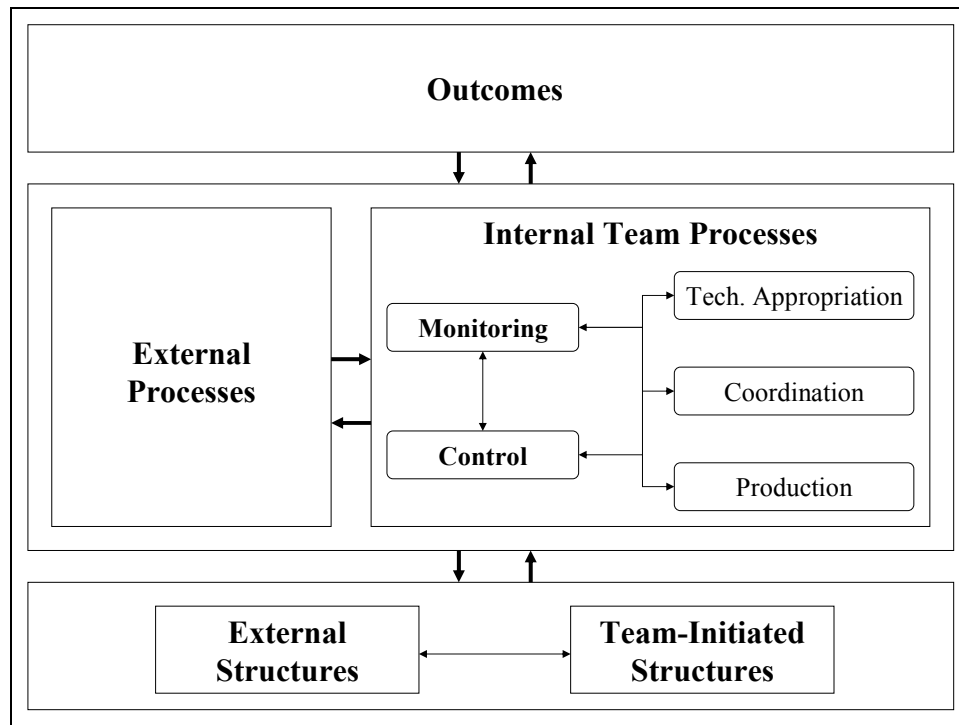


Figure 3.1 – 2000 GVT Exercise Timeframe

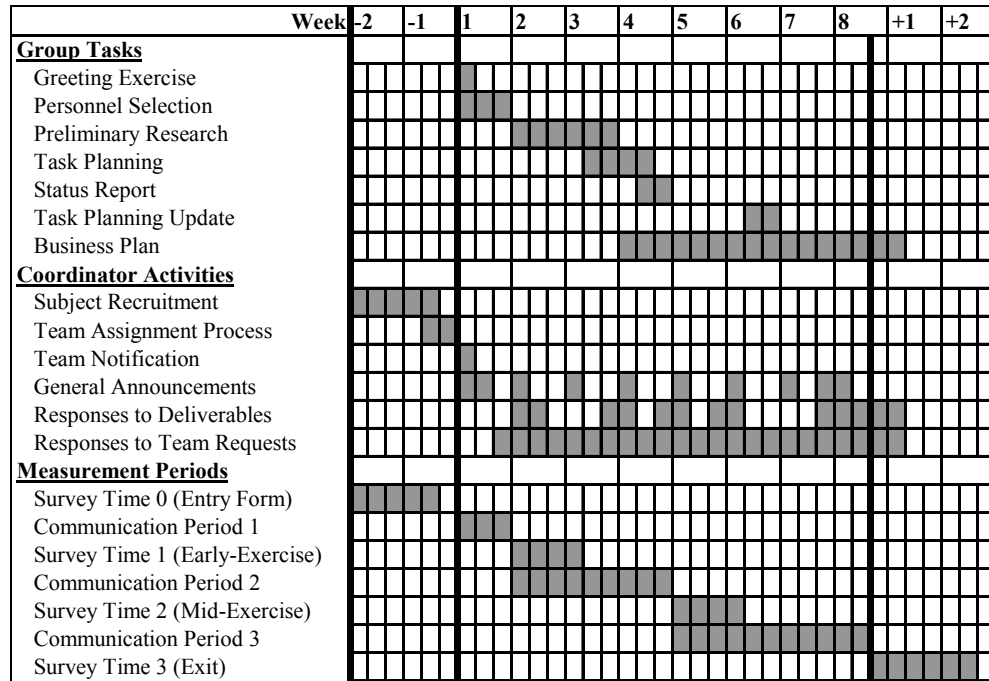


Figure 4.1 – Email Message to Coordinator to Remove AO from Team 1

Date:	Tue, 18 Apr 2000 08:32:12
From:	HR
To:	MA
Cc:	Coordinator, MA
Subject:	Re: Urgent Message from GVT Group 1
Importance: High	
Coordinator,	
This message is sent by HR and MA.	
At this moment, <i>we have decided to not consider into our team AO</i> from Country A as member of our team anymore.	
Reasons for this decision are as follows:	
<ol style="list-style-type: none">1. <i>We did not hear from him very often, he was late on every assignment</i>2. When the status plan was requested, <i>he got lost for several days and did not answer our emails on time.</i>3. The final and most critical, MA and myself started to send information about the business plan and he <i>never send us any information</i>, we splitted the report and he should make the marketing section, then on wednesday (4/12) he finally send us an email saying that he was very busy but he will do the marketing part.	
On friday (4/14), 2 days after he appeared, he sent us an email saying the following:	
“Here goes the marketing plan, enclosed. I had to do it a bit quickly because I have a booked travel for this Friday and I won't be able to communicate through Internet with you for the next 10 days. Hope everything goes well.”	
<i>The marketing report received was an empty file with no information AT ALL..</i>	
How is possible that someone leaves the duty as this?, <i>he did not care about who will finish the task!!</i> . He has holidays at this moment as I have them but I had to stay working as this task is not finish by the team.	
Due to the above, <i>we will turn the business plan without AO and we will not include him into the participants</i> , also, our report will consist of only 2 countries (Countries B and C) as we took out Country A.	
If you have any questions, please feel free to notify us	
HR/MA [emphasis added]	

Figure 6.1 – Core Concepts in Control Enactment Process Model

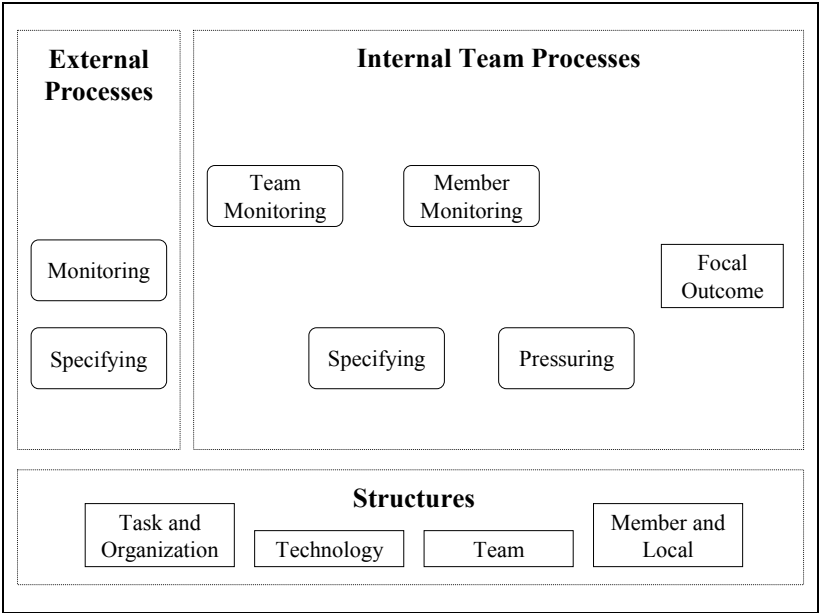


Figure 6.2 – Compliance Sequence in Control Enactment Process Model

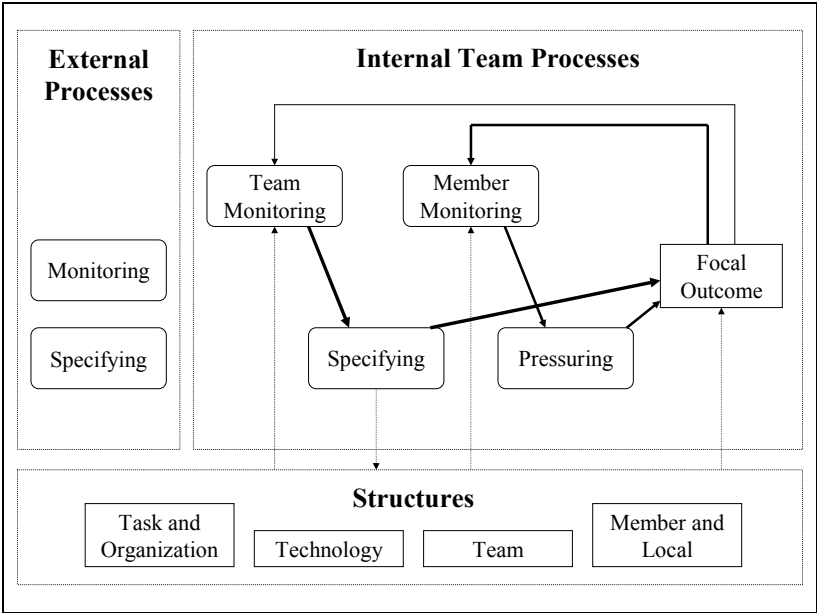
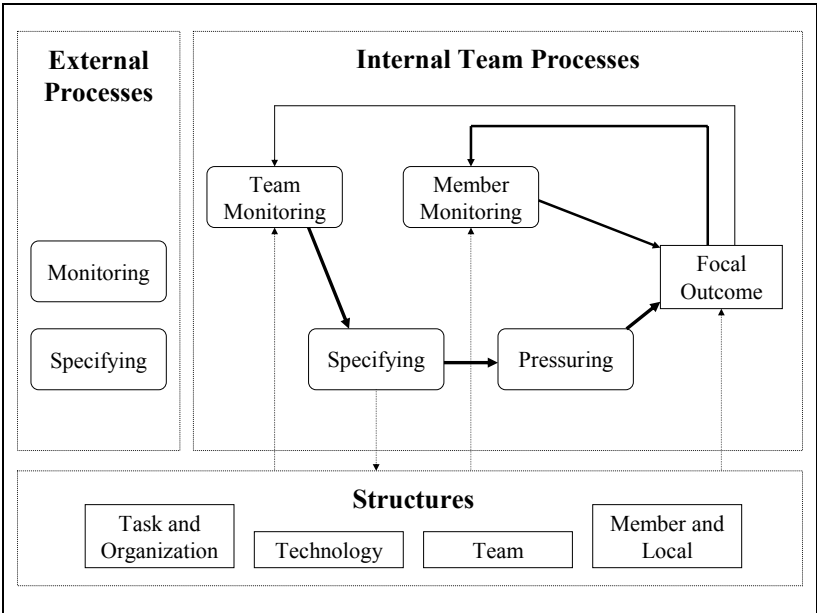


Figure 6.3 – Commitment Sequence in Control Enactment Process Model



Appendix A: Task Schedule and Instructions

A.1. TASK SCHEDULE

Beginning Date	Ending Date	Task
February 28	February 29	Greeting Your Team
February 28	March 4	Team-Building Decision
March 6	March 17	Preliminary Research
March 15	March 22	Task Planning
March 20	March 24	Status Report
March 22	April 19	Business Plan Task
April 5	April 8	Task Planning Update

A.2. INTRODUCTION TO THE GVT EXERCISE

The Global Virtual Team Exercise is a collaboration of faculty and students from universities around the world. Its purpose is to provide students with the experience of working with people from various cultures in a computer-mediated context. Experience with this "virtual" environment provides invaluable preparation for the workplace of the 21st century.

The project also serves as a research laboratory for the study of virtual teams. Issues of relationship building and team management are particularly salient, for the virtual context imposes obstacles to how these processes normally occur.

Each virtual team will be composed of 4 to 6 students. Most teams will have only one team member per participating university. All teams will communicate electronically (electronic mail, message boards, chat rooms, etc.). So far, we expect participation from universities in Europe, U.S.A., Mexico, Australia, and Brazil.

The 2000 GVT Exercise is expected to run from February 28 to April 19, 2000. The project is managed by Sirkka Jarvenpaa (Professor of Information Systems) and Brad Crisp (Ph.D. student) at the University of Texas at Austin.

Task Summary

Over an eight-week period, team members will collaborate to write a business plan for a new company offering a product or service to other businesses. The plan should be designed to creatively exploit advances in technology and new opportunities in global markets. In addition to activities designed to help with

group development, teams will be responsible for the completion of three required deliverables:

1. Preliminary Research -- The goal of this preliminary task is to help all team members become more familiar with the state of business-to-business electronic commerce in their home countries. The work will largely be done individually, but the team will submit its research as a group covering at least 3 countries.

2. Status Report -- The goal of this task is to report the status of the project at roughly the mid-point of the exercise. Each team will inform their "boss" about the particular business idea they will be developing in the business plan and how they plan to finish the business plan task.

3. Business Plan -- The primary task of the Global Virtual Team exercise requires your team to develop a business plan. Your new company is unusual because its employees are scattered throughout the globe. In order for them to work together on projects, they must do so virtually, just as your team is now doing. The people employed by the company work in the countries you reported on in your Preliminary Research. Also, your customers and major competitors have headquarters or major operations in these same countries. Because of these factors, the market and competitive analysis sections of your business plan should address issues specific to the countries you selected.

Student Requirements and Expectations

Participants are at least 18 years old and are generally masters level students who have a good working knowledge of English (team communication will be written in English). Participants should have some interest in business and are expected to make significant contributions to their teams. Assuming full participation and proper distribution of the workload among team members, the exercise will require approximately 30-45 hours of the student's time (i.e., average of 4-6 hours per week for most students). Students may be dismissed from the GVT Exercise for unreasonable behavior or poor performance (for example, low participation).

Students must have access to the Internet and possess an individual electronic mail account for receiving mail from their teammates. In addition, students will require a relatively recent World Wide Web browser. The browser will allow students to access GVT WebCentral (with common resources for all teams) and a dedicated website for each team (with communication tools). Basic instructions will be provided on how to access and use the technologies provided for this year's GVT Exercise.

Team Formation, Management and Monitoring

After completing the Entry Form, the GVT Coordinator will assign the student to a team, notify the student of his or her team assignment, and provide instructions on how to communicate with the student's teammates. This information will not be provided until the Exercise formally begins, so that all teams can begin at the same time.

Each student works as part of a self-managing team to complete the assigned tasks. Teams generate ideas, make decisions, and develop common documents using Internet technologies to communicate, collaborate, and coordinate. Each team is solely responsible for managing its own work to meet the task requirements and deadlines. Students should attempt to resolve differences among team members, but they may request assistance from the GVT Coordinator or their faculty sponsor. Teams have the right to expel students from their teams for unreasonable behavior or poor performance.

Team communication through the various technologies may be monitored by the GVT coordinators and faculty sponsors. Communication will also be archived for research purposes; however, no statements will ever be attributed to a particular student participant.

Evaluations

A panel of judges, composed of faculty sponsors, will evaluate the students' efforts. All business plans will be ranked, and the team with the top-ranked entry will win \$110 U.S. dollars per contributing team member.

Almost all students receive a substantial portion of their course grade (25% or more) based on the GVT exercise. Faculty sponsors are solely responsible for assigning grades to participants for their GVT performance; however, most consider the factors below when assigning grades. Sponsors determine how these factors are weighted.

- Quality of the team's business plan.
- Team member feedback on the quality and quantity of their teammates' effort.
- Communication statistics for each of the technologies offered by the GVT coordinators.

Exercise Coordination

Brad Crisp will serve as the primary coordinator of the GVT exercise. Brad will manage the GVT websites; establish the team communication technologies;

monitor technical problems; answer assignment or group-related questions; and encourage all teams to manage themselves and achieve high performance.

A.3. GREETING YOUR TEAM

Anytime you work with someone new, it helps to get to know them. This first activity simply asks team members to send (via the listserve) an email message to their teammates introducing themselves. You are encouraged to read your teammates' greetings and reply with something you have in common with each person.

Questions are provided below to give you some ideas about what to write. (Do not feel that you have to answer all of the subquestions; just cover the key facts you want people to know about you.) To simplify the process, we suggest that each member follow the same format in writing these introductions. There are six questions in all, and each may be answered with a single short paragraph.

1. In the first paragraph provide a *personal* description, including things like...
 - Where are you from?
 - What do you enjoy?
 - What do you look like? (If you have a home page, provide the URL)
 - What are your work and study habits?
 - What is your current area of study and why?
2. The second paragraph should be a *professional* description. You could...
 - describe your past job experiences,
 - describe your future job aspirations,
 - describe any experiences with teams and international teams,
 - describe any experiences with implementing information technology or business-to-business electronic commerce.
3. What do you want to learn from this project? Be as specific as possible, yet also be honest. If you have no particular goals, simply state that you have no particular goals.
4. What skills and abilities do you personally have that will enable you to contribute to the project?
5. What are the challenges that your team might have to deal with over the next eight weeks? Describe how your team might best deal with them.
6. Indicate any schedule conflicts that you have during the timeframe of the GVT Exercise (e.g., university holidays, personal trips, etc.).

In total, limit your responses to one paragraph per question, so that each member will compose six paragraphs. *Remember that this exercise is for the benefit of your team, so feel free to modify the activity as you see fit.*

Recommended Communication Technology: Team Listserve (electronic mail)

Deliverable: None required.

Due Date: We suggest that you complete this exercise by the recommended deadline.

A.4. TEAM-BUILDING DECISION

The purpose of this activity is to provide your team with the opportunity to practice working together using the technologies available to your team. Exercises of this type are used frequently in business to build effective teams.

This exercise asks your team to select a new (hypothetical) team member to work with your team. The ideal candidate should work well with your team and offer skills or other attributes that your team is currently lacking. While you will not have an opportunity to interview potential candidates, their summary information and resumes are provided below for your team's review. Each candidate is currently completing their MBA with an emphasis in information management.

Candidates: _A_ _B_ _C_ _D_ _E_ _F_ _G_ [resumes omitted]

STEP 1: Each team member should review the summary information and resumes for each of the candidates listed above. Evaluation criteria you may want to consider are suggested below. Feel free to add factors to this list that you feel are important.

- quality of work experience/skills
- demonstrated performance and character
- ability to work with your team
- potential area(s) of contribution to your team

STEP 2: Team members should post their evaluation of the strengths and weaknesses of each candidate at the team's bulletin board. Include a rating of each candidate as Strong (great candidate), Average (OK candidate), or Weak (poor

candidate) and provide the criteria upon which you made your judgment. Read your teammates' evaluations and reply with agreements and disagreements.

(Technology Tip: Unlike email, a bulletin board is useful for conducting discussions on several topics (called "threads") at the same time. Your team will probably want to experiment with different ways to carry on conversation with this type of tool.)

STEP 3: After a few days of discussion, team members should email their teammates with their ranking of the candidates from 1 (first choice) to 7 (last choice) and should summarize the key factors that justify the rankings.

STEP 4: Your team should schedule and conduct a meeting in your team's chat room. The purpose of the meeting is to finalize the team's rankings. The team should rank order the candidates from 1 (first choice) to 7 (last choice) and should agree on a clear rationale for the rankings. (This requires more than averaging individual rankings by each team member.)

(Technology Tip: It may be helpful to state the meeting time in terms of Greenwich Mean Time, due to time differences. As a courtesy to your teammates, please review the instructions for using the chat room before the scheduled time of the meeting. Also, it may be helpful to have one team member serve as a moderator to help guide (but not dominate) the discussion.)

STEP 5: The team should write a paragraph or two to your "boss" explaining the reasons for your rankings (i.e., why was candidate X the first choice and candidate Y the second choice). Please be clear about your selection criteria.

Recommended Communication Technology: Listserve (electronic mail), Bulletin Board, and Chat Room, as explained above.

Deliverable: None required. If the memo is completed, please send it in the body of an email message to the Coordinator with your team number (e.g., gvt10) and "personnel selection" in the subject line.

Due Date: We suggest that you complete this exercise by the recommended deadline.

A.5. PRELIMINARY RESEARCH

The goal of this preliminary research task is to help all team members become more familiar with the state of business-to-business electronic commerce in their home countries. The research will largely be done individually, but you are encouraged to share ideas with your teammates (e.g., research strategies) as you conduct the research. Collaboration should be limited to members of your team. Teammates should also begin discussing more specific areas of interest (e.g., consulting to a particular industry, web design services) where the team's new business could be targeted.

Step 1: Each team member will begin researching business-to-business electronic commerce as it is being applied in his or her home country. Electronic commerce can be interpreted very broadly in terms of products and services, but you should focus on transactions between businesses (rather than direct transactions with consumers). Broad questions to consider might include:

- How much money is being earned by companies involved in business-to-business electronic commerce? How much growth is expected?
- What types of products and services are being offered? What growth areas are being projected? Who are the key players?
- What does it take to succeed? What are the obstacles to this way of doing business?

The team may choose to be more targeted in its research (e.g., a particular industry), but this is not required. To gather information, the team members may use the Internet, local information sources, interviews with local managers, and so on.

Step 2: Each team member will submit to the team about two pages worth of findings in the form of facts, figures, quotes, insights or other useful information. Sources should be cited; *plagiarism will not be tolerated*.

Step 3: One team member will put the individual team member submissions in one document and will submit the research as explained by the GVT Coordinator. The team research report should cover at least 3 countries.

Deliverable: One team member on each team should send the Preliminary Research to Brad Crisp via email. The report should be in a Microsoft Word file titled "rsch_XX.doc", where XX is your team number. For example, team 3

would send a file called "rsch_03.doc". The team should also post the report in the team folder of their file sharing area.

Due Date: This is due on or before the last day of your team's Preliminary Research Task at 19:00 Greenwich Mean Time. For a listing of the GMT time adjustments, see the GMT page. For the exact due date, see deadline.

Evaluation: This research is largely for the benefit of the team and is not intended to result in an exhaustive, formal research report. It is intended to surface information that will guide the formation of the team's business plan. As such, the Coordinator will check to see that the report was reasonably completed and submitted on time.

Failure to turn in the assignment within 3 days of the deadline will result in a 5 point reduction on the grading of the team's business plan.

Failure by the team to reasonably complete the research will result in a 10 point reduction on the grading of the team's business plan.

A.6. TASK PLANNING

[Note: Statements in italics in the instructions below were only included in the treatment groups, so teams 1 and 2 in this analysis received these questions while team 3 did not.]

This exercise asks your team to make critical decisions about the direction of your business plan and how you will complete the remaining tasks.

STEP 1: Please reread the instructions for the Business Plan so that you fully understand the requirements of the primary task that your team is expected to perform.

STEP 2: Team members should discuss and make decisions about the issues listed below. You are expected to discuss each question in sufficient detail to be able to write a specific, brief statement summarizing your team's decisions.

Business Plan Content:

- **Business Line** – What will your business do? (e.g., Electronic Data Interchange consulting)?

- Revenue Model – How will your business make money? (e.g., fees for consulting services)
- Countries of Operation – In what countries will your target business customers reside? (select at least 3 countries)

Teamwork:

- *Performance Goals – Discuss and agree upon 1 answer for each:*
 - *Ranking from 1 (best team) to 75 (worst team):*
 - *What is your group's desired rank?*
 - *What is the lowest rank your team would find acceptable?*
 - *Rating from 100 (highest score) to 0 (lowest score) with 60 as the minimum passing grade:*
 - *What is your group's desired score?*
 - *What is the lowest score your team would find acceptable?*
- Task Assignments – How will the work be divided among team members to accomplish the tasks? Who will do what?
- *Process Goals – What team-set milestones are necessary to ensure all exercise deadlines are met (e.g., when will the first draft be completed?)?*
- *Rules and Procedures:*
 - *Communication:*
 - *How often should team members check email and the bulletin board?*
 - *How often should team members send email messages or post to the bulletin board?*
 - *How will the GVT communication technologies be used?*
 - *Accountability:*
 - *How will team members monitor behavior and hold each other accountable for their work?*
 - *What should be considered unreasonable behavior or poor performance that could result in dismissal from the team?*
 - *What will be the consequences for not meeting team expectations? For example, what role will the formal peer evaluations (at the completion of the exercise) play in encouraging team member performance?*
- Schedule Conflicts - Tell your teammates if there any remaining periods during the GVT Exercise when you will not be available to participate.

STEP 3: Once there has been sufficient discussion, decisions made for each question or issue should be summarized briefly. This Task Planning Summary should be circulated to all team members (via the listserve), with any differences in understanding resolved through discussion. A final version of this document

should be posted on the team website where all team members can easily reference it later.

Recommended Communication Technology: Bulletin Board (one bullet or question per thread in the bulletin board), Listserve (to encourage involvement and circulate new summary documents), and Chat (for resolving specific issues).

Deliverable: Have one team member post the team's Task Planning Summary on the team's website. Also, be sure your team discusses the issues in this activity necessary to complete the Status Report.

Due Date: Please complete this exercise by the deadline.

A.7. STATUS REPORT

This task asks the team to report externally on key decisions made during prior work, especially the Task Planning activity. The Status Report will be shared with the GVT Coordinator and Faculty Sponsors.

STEP 1: Your team should select one team member to draft a 1-2 page memo highlighting key decisions made about the business plan and how it will be completed. The Status Report should contain the three sections below and overview many of the detailed decisions made in the Task Planning activity. While the Task Planning Summary is primarily for internal purposes, the Status Report will be targeted to the "boss" that oversees your team.

- Describe your new business idea that will be the subject of the business plan.
- Explain how your team will manage the completion of the business plan.
- Highlight issues that require outside attention (e.g., technology problems, task questions, participation problems).

STEP 2: After composing the memo, the author should paste the memo in the body of an email message and send it to his/her teammates via the listserve. Team members should provide feedback to the entire team and suggest corrections. Be specific about any disagreements, and resolve issues as necessary.

STEP 3: Before it is submitted, the memo should be updated to reflect the feedback in Step 2. See deliverable instructions below.

Recommended Communication Technology: Listserve

Deliverable: Required. The status report should be posted on the team's website and the content of the status report should be sent in the body of an email message to Brad Crisp.

Due Date: This is due on or before the last day of the Status Report at 19:00 Greenwich Mean Time. For a listing of the GMT time adjustments, see the GMT page. See deadline.

Evaluation: The Status Report is considered a means to document team progress and identify problem issues. The Coordinator will check to see that the report was reasonably completed and submitted on time.

Failure to turn in the assignment within 3 days of the deadline will result in a 5 point reduction on the grading of the team's business plan.

Failure by the team to reasonably complete the status report will result in a 10 point reduction on the grading of the team's business plan.

A.8. BUSINESS PLAN TASK

The primary task of the Global Virtual Team exercise requires your team to develop a business plan. The business plan is for a soon-to-be-formed company that specializes in some aspect of business-to-business electronic commerce. Your team's progress in prior GVT tasks should assist you in completing this task.

Your new company is unusual because its employees are scattered throughout the globe. In order for them to work together on projects, they must do so *virtually*, just as your team is now doing. The people employed by the company work in at least three of the countries you reported on in your Preliminary Research. Also, your customers and major competitors have headquarters or major operations in these same countries. *Because of these factors, the market and competitive analysis sections of your business plan should address issues specific to the countries you selected.*

Your business plan should be a complete analysis of your new company, and it should follow a traditional format. Several resources, including a template, are provided at GVT2000 WebCentral to help you decide what to cover. This template is very comprehensive and detailed, but you are welcome to adapt it to

better serve your purposes. However, it would be wise not to deviate too radically from this traditional format.

Although your business plan should conform to an expected format, it should emphasize one of two areas: Marketing or Operating. This is in contrast to many business plan templates and guides, which tend to focus on financial issues. The business plan you will write does not require such a comprehensive financial analysis. However, the business plan should be well integrated and presentable to a venture capitalist who may be interested in assisting with the financial analysis, so that he or she can help finance the new company.

The complete business plan report should include an executive summary (maximum 1 page), the body of the report (6 to 8 pages), and appendices (unlimited number). Teams will be penalized for exceeding the page limitations. Approximately 50% of the body of the report should be devoted to your emphasis, either Marketing or Operating. Each of these issues will be now be explained in greater detail.

Marketing Plan

The Marketing-oriented business plan should include all of the sections of a standard business plan. In addition, it should address the following questions:

- What kinds of individuals or companies would qualify as potential customers? (Be specific... List some companies from each country that you consider potential clients.)
- How will the company identify potential customers in the countries you select?
- How will the company make customers aware of its presence in these countries?
- How will the company convince potential clients to buy its goods/services?
- What is the company's competition in the target countries?

Finally, the Marketing-oriented business plan should include a preliminary design of the company's web site, with particular attention to those aspects of the site intended to support marketing. (Note: This design does not have to be a functioning web site, but rather a mockup. Feel free to use your word processor or presentation graphics software to create this design.)

Operating Plan

The Operating-oriented business plan should include all of the sections of a standard business plan. In addition, it should address the following questions:

- What is the company's business strategy?
- What is the company's organizational structure?
- What are the key roles?
- What are the high-level work processes of the company and how do they map to the roles?
- Given that the employees are in several countries, how will the globally-dispersed employees collaborate on projects? What kind of technological infrastructure is necessary (and feasible) that will support the virtual work of the employees?
- How will the company recruit employees in the target countries?

Please be sure to state in the Executive Summary whether your plan will focus on Marketing or Operating issues.

Deadline: One team member on each team should send to Brad Crisp via email the complete Business Plan. The report should be in a Microsoft Word file titled "plan_XX.doc", where XX is your team number. For example, team 3 would send a file called "plan_03.doc". Your plan should also be posted on the team website. Brad will make the business plans available to the faculty sponsors.

Due Date: This is due on or before the last day of your team's exercise (deadline) at 19:00 Greenwich Mean Time. For a listing of the GMT time adjustments, see the GMT page. See description of bonuses and penalties for early and late submission below.

Evaluation: A team of judges will evaluate the students' business plans. The winning business plan team will receive \$110 per contributing team member. The evaluation criteria will be as follows, with 100 points as the maximum score:

1. The idea for the business: (20 points)
 - original
 - feasible
 - has potential
2. The marketing or operating analysis: (30 points)
 - well targeted
 - balances global and local issues

3. The business plan: (40 points)
 - comprehensive
 - clearly written
 - well researched and justified
4. Overall, the ranking of this plan vis a vis other plans. (10 points)

In addition to potential penalties imposed from the interim deadlines, the timing of the business plan submission will also impact the score as follows:

- 2 points added for every day early (10 points maximum)
- 3 points subtracted for every day late (the plan will not be accepted if more than 7 days late)

A.9. TASK PLANNING UPDATE EXERCISE

This exercise asks you to revisit your plan for the Business Plan Task.

STEP 1: Please review your team's Task Plan Summary I and Status Report and identify any changes you believe are necessary based on your more recent team experience. Communicate and discuss these suggestions with your teammates.

STEP 2: Create and post a webpage (Task Planning Summary II) that summarizes the revised decisions. This document will serve as an internal aid to help the team.

Deliverable: We recommend that one team member post the team's Task Planning Summary II on the team's website.

Due Date: We suggest that you complete this exercise by the recommended deadline.

Appendix B: Selected Survey Measures

This appendix briefly describes the origins of selected survey measures that are relevant to this dissertation. All of these items were measured on 7-point scales and were reviewed for face validity by the author and five colleagues. Four of these colleagues were originally from outside of the United States and could also reflect on the survey from the perspective of other cultures.

Level of Team Control

Modeled after a measure of personal control by Liden, Wayne, and Bradway (1997), these new items refer to a team's behavior and outcome controls for the global virtual team context.

- How much influence does the team have over how individual team members behave on this project?
- How much influence does the team have over the amount of individual team member communication?
- How much influence does the team have over how individual team members are evaluated or rewarded for their work?
- How much influence does the team have over what individual team members do on the project?
- How much influence does the team have over the quality of individual team member participation?

Team Control Mechanisms

New items were developed for team deadlines and rules. Of the monitoring items, three were adapted from leader behaviors in Manz and Sims (1987), two were adapted from unpublished measures of monitoring used in the 1999 GVT Exercise, and one item was added.

Deadlines

- We have specific goals for when we want sub-tasks completed.
- My team has its own detailed schedule for finishing the business plan.
- My team has specific goals for when parts of the business plan should be done.
- We have a target date when a draft of the business plan should be done.

Rules

- We have rules about team member communication.
- My team has specific expectations about team member behavior.
- My team has specific rules and procedures for members to follow.
- We have rules about team member participation.

Monitoring

- We try to be aware of this team's level of performance.
- My team attempts to judge how well we are performing.
- We pay attention to how this team's performance stands.
- My team monitors the actions of its members.
- We pay attention to what people do on this team.
- My team monitors what members do to make sure they comply.

Appendix C: Team Descriptions

The descriptions below attempt to summarize all known interactions among team members or with the Coordinator during the project. All communication is via the listserve unless noted otherwise; likewise, all email was sent via the listserve unless noted otherwise. For formatting reasons, some paragraph breaks in the original archives are replaced with <p>, which denotes a new paragraph in the original text.

C.1. TEAM 1

Episode 1: Greeting

Week 1 (February 28 – March 4)

Monday (February 28)

The Coordinator gave general instructions to the team about the project and encouraged the team to do the greeting exercise until their team website became available. Team members would be identified as they introduced themselves. WI (not a team member) and MA each sent greeting messages to the team 1 listserve.

Tuesday (February 29)

MO (not a team member) and HR each sent a greeting message to team 1. The Coordinator warned that some people had sent their messages to the listserves of several teams.

Wednesday (March 1)

AO sent a greeting message to team 1. [All greeting messages were structured following the suggestions in the greeting exercise or directly addressed the content requested.] [The Coordinator provided instructions directly to each student for accessing the team website (with task instructions and communication technologies) and the general website (that contained the membership list of the team).]

Episode 2: Personnel Selection

Friday (March 3)

MA wrote, “Have you already checked our group’s homepage? ... According to the schedules the first task has already begin and ends TOMORROW and that means we all should do something quickly.. :).” She asked people to review the

task instructions, and she suggested a time to chat, including in her message the local times for the active members of the team. MA suggested that they try to finish the report Monday. She also posted a picture of herself to the file sharing area, so “at least you’ll have some kind of idea who I am.”

Hours later, MA reported that her personnel selection list could now be found on the bulletin board. She asked teammates to use the website because “they are watching how active we are through these web pages. All the comments in chat area + bulletin board + file sharing part will be visible for those who evaluate our work. So add lots of stuff so we’ll get good marks of this project.. :). Chat on Monday?” HR responded to MA’s first message that he had Internet access problems at work that would make it difficult to chat on Monday but he was available on Sunday.

Week 2 (March 5 – March 11)

Sunday (March 5)

That morning, MA emailed that she would be “online around 7:30pm. That would be something like 11:30am your [HR’s] time and 2:30pm AO’s time if he only read his mails by then.” She observed hours later, “So no-one seems to be in the chatroom.” MA then asked the teammates to evaluate her personnel action list and “write what you feel about it.” She asked them to exclude the name of “that fellow from [CN’s home country] so they realize that s/he hasn’t contacted us.” [The chat logs reveal that MA and HR missed each other by over 4 hours.]

Monday (March 6)

HR apologized for the “confusion.” HR explained that he checked his email on “Saturday around 4:00pm” and believed that MA had not read the message so he did not check messages on Sunday morning. HR included his personnel list in the message, indicating problems with the “GVT server” and that his “mail system is working randomly.” HR requested MA’s feedback and indicated that he was “able to write the final mail and send it to the coordinator.”

AO apologized for his absence [5 days], blaming computer problems, and he asked for a time to chat with MA on Monday. In another message, AO volunteered to write the report but stated his desire for feedback and requested a chat session again. AO then repeated his apology. [AO had posted his personnel list at the bulletin board at this point.] MA responded that she could not meet for chat. MA provided feedback on HR and AO’s lists and requested that they resolve the differences and then have HR submit the report.

AO summarized that the common choices were C and B, suggesting that they use HR's paragraph to support the choice of C and asking for feedback. AO followed immediately with a message repeating his perception of the group's preference for C and asking HR to forward the submission with some specific information required by the task instructions. He suggested that they explain to the Coordinator their reasons for not using chat.

MA replied asking whether they were supposed to select one applicant or rank order the entire list. MA also stated, "And what was the next task..?" MA's next message began with excerpts from the task instructions (personnel selection and research). AO responded that "you were right" and that he liked MA's list. He requested that HR let him know if he needed to write the report. He ended with, "What about our mate from [CN's home country]?" HR said that he just received 10 messages and that he would send the report to the Coordinator. His next message did just that. [The team sent 14 out of their total of 90 messages on Monday (March 6). Also, by this date, all three active members had each notified the Coordinator that CN had not contacted the group. They realized later that they had done so.]

Episode 3: Preliminary Research

As indicated above, discussion of the research task began on March 6th before HR submitted the personnel selection list. MA provided an excerpt from the research task instructions, asking, "So should we decide that by next Monday (13.3) all of us [will] have gathered information and then we'll have the rest of the week to summarize what we have found out?" She thought she would work on it on Sunday. MA also reminded that they would lose points if the report were turned in late.

MA then wrote that she was searching for information and "felt that I might not be doing it right.. Do you think it would be good if we all would upload our plans/documents to the 'file sharing' no matter how drafts they are? I was thinking it might be helpful to see what you've done and how you've started with your work. I have mainly copy-pasted information from the web and I haven't really found too much of RELEVANT information. I just thought it might be easier if I could check your drafts once and a while to see what kind of documents you're writing..." HR first responded that he would "load" his draft tonight, but he explained later that his teacher had described the task to him differently and that he had not collected any information at that point.

Tuesday (March 7)

The next day, MA provided some hints for using the file sharing area, talked about the status of her draft that she posted there, and encouraged, “Add your drafts there too so we can check how the others have thought about the task. A little help in doing this.. :).” She added, “And if you happen to have a picture of yourself, please add them too to the main directory. I’m a bit curious to see what you two look like..” The Coordinator congratulated the team on turning in the personnel selection memo.

Wednesday (March 8)

AO replied on Wednesday that he subscribed to business magazines that contained the necessary information. He would begin work on Friday, then upload something to the team site. His ending was “Hugs..” HR wrote on Saturday that he had added two presentations “that show something about the ecommerce in Latin America.... [These may be] very general, but [they are] the best I have found.” The Coordinator informed them that CN had withdrawn from the class and would not be participating in their team.

Thursday (March 9)

The Coordinator requested participation in survey 1.

Week 3 (March 12 – March 18)

Monday (March 13)

The Coordinator sent a reminder that the research task was due on Friday. MA informed that she had uploaded her “third version.” Her part was “nearly ready” and she wanted some feedback. She volunteered that “...if you have your versions ready today I could put them together tomorrow.” She added, “But don’t worry. I’m sure they’ll grade our parts separately in each university so you don’t have to worry that my miserable report would affect your grades of this course. :).”

MA wrote again that she “...had some more time than I expected so I finished the report. It’s not that great but at least I got something together.” She then asked if they could have their reports ready today, although “it’s not that we’re in a rush or anything” since “we have time till Friday.”

Wednesday (March 15)

HR admitted that he was “having difficulties to find information”, but he found out he would be attending a seminar on e-commerce for his company. He would “be able to prepare the document with no problem” afterwards [he did not reveal when the seminar was being held]. He apologized ‘that I did not inform you

before but I have not found any decent information as not many sites with information about Mexico are on the web.’

AO also wrote, “After years and years :-)) my research on Brazilian e-commerce is available” at the website. He then reminded about the deadline on Friday and added that his picture was now available to download.

Thursday (March 16)

MA notified that a version of the report was on the website with “AO’s and my documents only but at least you can imagine how it’s going to look when HR’s part is added....” She indicated that she would send it tomorrow at a specific time (before she left from work) and hoped HR would provide his part by then. HR replied with his document and asked her to acknowledge. She confirmed receipt and submitted to the Coordinator.

Episode 4: Task Plan/Status Report

A few minutes later, MA wrote, “So now we have to start the next task.. Can you take a look at it during the weekend? It should be ready on Wednesday and I can’t do anything then – the whole day is already booked.” She then suggested options for the process of getting the task plan done, including the suggestion of a chat session for Sunday.

Friday (March 17)

MA asked if they had “checked what we have to do now.” She then suggested that they use the bulletin board to discuss the task planning issues, stating, “Go check it.” She also inquired what they thought about the possibility of a chat on Sunday. Thirty minutes later, she informed them by email that her ideas were on the bulletin board. She would check her email over the weekend so they could respond any time. She reminded that the deadline was Wednesday (when she would not have any time) and said it would be “nice to finish this by Tuesday.”

At the bulletin board, MA described her proposals as “Not very carefully thought ideas but something to get you started..” She attached a file with all the questions or topics from the task planning instructions and provided a brief suggestion or question about each one. About the business: “Do we sell something? That would be easy.. How about if we sell payroll computation services or systems? This is just a proposal. Tell me if you have better ideas..” About process goals: “First draft of the final work ready by 10.4. ??? What is there to do before that?” About checking email and the bulletin board: “Every day or twice a day?” About sending or posting messages: “Every other day??” About GVT technologies: “Bulletin boards and file sharing part will be used. Maybe chat?” About

monitoring behavior and accountability: “I’m sure we would notice if one of us wasn’t doing anything..” About unreasonable behavior or poor performance: “Not doing work in deadlines??” About consequences for not meeting team expectations: “???”

HR replied to the email message, “Bulletin board is a good idea and I am available to chat on Sunday. Let me know what time is better for you.”

Later at the bulletin board, HR posted a revised version of MA’s file, inserting his comments and placing his name with a colon in front of each of his thoughts. About business: “Maybe we can sell information such as relocation services, in other words, when a company transfers executives from one country to another there is a need of information regarding house availabilities, cost of renting, etc...” He suggested 35 (up from 45) as the lowest acceptable rank. He indicated “the project must be done by 14/4 because there is a week of [religious holidays] in Brazil and Mexico.” He wrote “as above” or “I agree” on most of the remaining issues. On how often to send messages: “As needed but no less than every other day.” On the GVT communication technologies: “I will go with bulletin boards/file sharing and email, chat has been a problem for us to set a date and time to communicate.” On the consequences question: “I think we need to trust everybody will do its part, I think the evaluation will not force us to work, it’s a consequence of our work.”

AO apologized that he was not available to chat on Sunday, but: “You two could do it and then tell me later how it was.” On Saturday, AO said he had “arranged some time” for chat and asked if they could find a time that “matches.” Also, the Coordinator confirmed receipt of the preliminary research noting that it appeared to have contributions from AO, MA, and HR. The Coordinator also encouraged them to not “let up now” and stressed the importance of the work planning activity.

Week 4 (March 19 – March 25)

Sunday (March 19)

MA said she would be “online from now on till evening” doing some other work and that she would keep the chat open. She believed that she had “4 hours to wait” until the actual meeting time and hoped she would not be exhausted by then. Almost 5 hours later, she wrote: “Hi, I got fed up waiting for you in the chat room. No more chatting after this, ok?” She said she summarized the previous comments to the bulletin board, encouraged AO to “Add your comments as soon as possible”, and asked HR to clarify some questions she put in the document.

She asked if it was OK for AO to summarize everything after providing his comments and send it to the Coordinator.

MA's comments on the bulletin board: "AO: Add your comments in it as soon as possible and I might have time to collect all information to one document tomorrow. That didn't mean that either of you couldn't do it.." In the attached file, MA deleted her proposed business and kept HR's idea. She deleted HR's comments of agreement, accepted HR's higher minimum rank, and asked clarifying questions on two of HR's statements. She agreed that the project should be done by the April 14th [5 days early]. She changed 'checking email' to read: "Every day / twice a day depending on possibilities." She used HR's suggestion for sending mail: "As needed but no less than every other day." She also agreed with his position for GVT technologies: "Bulletin boards, email and file sharing part will be used. No more chatting.." She changed HR's consequence statement from "I think we need..." to "We need..."

AO explained that he was sleeping when MA wrote the message that she would be online and that he entered the chat room "exactly at 12pm my time (which was the time I told you I would be entering – between 11pm and 12pm my time)." He agreed "about meeting at the chat-room. I'd rather making our group decision through e-mail only."

HR wrote in response to MA's 'I'm online' message: "I am connected but seems MA is gone, I will be waiting more time." HR then posted a revised file to the bulletin board with his replies to MA's questions. He added, "I Think the problem is that if we need to chat, time MUST be set since Friday and be very specific. Example at 11:00 my time, 2:00PM AO's and 7:00PM MA's."

[The chat logs show that MA and HR missed each other by almost 2 hours. There is no record of AO entering one of the logged chat rooms, but he could have entered a different chat room.]

Tuesday (March 21)

MA wrote: "AO, could you please add your comments to the bulletin board? The deadline is tomorrow and I don't have any time for this after today." She indicated that he would need to finish it with HR if he did not provide his comments today. She also noted, "Status report is due on Friday at 19 GMT and we should have already started working with it. And if status report will be late we will lose points!!! So that has to be finished in time."

MA posted a revised version of "the task planning report without AO's comments." She revised and summarized the sections where HR answered her

questions. She also removed any reference to chat under the GVT technology question.

Then, she posted a draft of the status report to the bulletin board and sent a copy to the listserve as recommended in the instructions. She recommended taking the marketing perspective for the business plan because “I’m a computer science student and I don’t have a clue about the stuff in the operational view.” She added, “And we have to set also other goals than just the final deadline. We have to divide this job into smaller pieces that will have deadlines of their own. That way we’ll avoid the situation where one had thought of making his/her part on the last day and the others have to wait for that to proceed.”

AO posted his comments on the task plan to the bulletin board. On the business idea: “I think this was a very original ‘product’ to sell over the Internet....” Under task assignments: “Luckily, I have done an assessment (a work for college), here in Brazil last semester, with headhunters (those guys whose job is to “hunt” for excellent executive). I have some information regarding transferring executives from one country to another.” AO said that the project should be done by the 13th, ‘at least his part.’ About technologies: “I agree about no more chats.. We found out that is pretty difficult to match our available time.” He wrote “Agree” to the statement about relying on trust.

HR responded to MA’s message about the status plan, “I have it and will add more stuff during these days.” At the bulletin board, HR then pasted a grammatical correction to MA’s latest version of the task plan and asked AO to add his “comments as soon as possible.” [He was apparently not aware that AO just posted it.] He then repeated this request through the listserve saying, “there is a draft ready to be sent to [the Coordinator], only are missing your comments....” He asked AO to review and send the draft.

Four minutes later [not sure if in response], AO said that his task plan comments were on the bulletin board and that he would send his status plan comments to MA. He then sent a message to the listserve saying he emailed his status plan comments directly to MA’s email account.

Wednesday (March 22)

MA said she received “several mails from you two yesterday, but I don’t have time to concentrate on them today. I promise I will try to arrange some time tomorrow for them.” She also asked who was going to send in the task plan. HR asked AO if AO could send it because HR would be “very busy.” AO replied to HR, “Don’t worry. I’ve already forwarded it to [the Coordinator].” The Coordinator acknowledged receipt of the task plan and provided some clarifying

information to all teams about the business plan task. Also, HR “added more facts and ideas to the draft” of the status report.

Thursday (March 23)

MA said she posted a revised version of the status report on the bulletin board and she has a “feeling that it doesn’t require that much anymore.” She asked for volunteers to revise and submit it, but she was willing to do it “if neither of you has more time.” At the bulletin board, she explained, “I collected AO’s comments to the report with HR’s and added some more comments of my own. So check it out and tell me if we still need something.”

In the document, comments of each person were identified by name. Each person listed several ideas about what services could be provided by their business. One of the comments attributed to MA read: “Do we need much more? I think this is starting to look like a business idea..” Under getting the plan done: HR had a friend at a real estate company that might provide some information, while AO “studied Marketing last semester” and should have information to help with that part. MA commented, “Good. I think we’ll manage. My part will be extremely reasonable thinking and the female logic ;) And I have some friends who study economics so I suppose I could ask them for extra help if needed.” She also thought she might have some technical knowledge that would be useful.

AO responded to MA’s email message, “Leave it to me (the Status plan summary). I’ll have spare time this afternoon....” HR thanked AO. AO rewrote the status report, changing it from a discussion to a report. He added much of his own content and submitted it the Coordinator.

Thursday (March 23)

MA replied, “Thanks.. it was great. And then.. should we make some deadlines for our next activities?” The Coordinator also responded, confirming receipt of the status report. The Coordinator replied to two of the status report issues on the 31st, one week later.

Episode 5: Business Plan Early

Week 5 (March 26 – April 1)

Sunday (March 26)

MA informed her teammates about the “form” for the business plan (which included the “main titles”) that was available at the general website. She wrote some of her “ideas on our bulletin board,” providing “comments of [her] own” in response to “[the Coordinator’s] requirements.” She continued, “Now we should

decide some dates and deadlines. Like what do we do first and when does it have to be ready. We could decide that something has to be done by everybody by next Friday but what would it be? I don't seem to know where to start. Make suggestions about how we start this business plan."

At the bulletin board, MA added, "Here are the first ideas for our business plan. The parts in bold are copied for [the Coordinator's] specification for Business plan. The ones with normal text are my ideas."

Monday (March 27)

The Coordinator sent an encouragement to all teams to keep working, reminding that bonus and penalty points would accrue based upon when the plan was submitted.

Wednesday (March 29)

AO wrote late in the evening, "Hi guys, <p> I have been extremely busy at college this week and I won't be able to devote much time to GVT until Sunday. I've got three hard exams in the following days, so I'll spend the whole weekend studying. But I've printed out everything I've found on our group site about the bizplan. I'll just have to take some time to read it all and get start with something."

Week 6 (April 2 – April 8)

Monday (April 3)

MA wrote, "Hi, <p> what are we going to do about the business plan? We should be starting to do something already.. The problem is that I have 4 exams and a project finalization this week and next weekend I won't be in Tampere. So I don't really have time for anything.. Do you think if we did this next week we would be able to finalize this by the deadline?"

HR replied, "What I am able to do is start investigating something about the executives transfer process and their conection with a real estate company. I will load it in the file sharing by the end of the week and will let you know for your review."

Thursday (April 6)

The Coordinator reminded the teams that they were "just two weeks away from the official deadline...", encouraged them to consider doing the task planning update, and repeated the business plan evaluation criteria. Minutes later, MA asked, "when was it that you guys had some holiday? It's wasn't next week, was it? Hopefully not. Otherwise our business plan is in quite a bad shape. :(I can try

to do something on Friday but I can't promise anything as I have so much other work to do then. But let's try to be active next week so that we could finish this on time." HR replied, "Holiday starts on April 22nd. Next week will be hard."

Episode 6: Business Plan Late

Week 7 (April 9 – April 15)

Sunday (April 9)

HR wrote, "Hello MA/AO, <p> I have loaded into the file sharing section a Report and some questions that arise to me. Its not long, but I wrote the ideas I have and please look into it and we need to start to work on it. <p> Suggestions?" In the file, he began with, "I wrote a service description below, read it and try to add things and then will try to get order on it." HR described in a numbered list what he learned about relocation from a visit to a Century 21 real estate company, his ideas for the new business, and issues that needed to be addressed. He concluded the list with "What I wrote is able to be modify, read it and can help us to start getting ideas on the report." HR then provided a lengthy description (2 pages, single-spaced) of the business idea and the company's potential focus in each of the countries of operation. He asked AO twice to provide additional ideas for the company's operation in Brazil [AO's university location].

Monday (April 10)

MA responded, "HR you've really done good work in collecting information!! I was wondering what kind of Internet service that was you meant. Was it something like this service we have in Finland: [real estate company website address]." She explained that the website was in Finish, but she provided a verbal description of the steps to search on the site and the content that was provided. She made some contrasts in how their site could be different and asked questions about potential functionality. She ended with, "This message is getting so long now that I'll add the rest of the comments I have in File sharing."

Almost two hours later, MA wrote that she "added a second version of HR's document to file sharing" with her comments written in green. She also added a "design draft" of the website and requested feedback on specific features of the website. She ended, "Waiting for comments." [The design draft was an excel file with black and white diagrams of 3 pages for the website.]

In the revised version of HR's report file, she provided a several paragraph response on site features and content to HR's question: "I am suggesting to offer our services thru internet, guys, I am not a computer man, suggestions on how to offer the service???" She suggested the name "Triangle," due to their three

locations. And she ended with, “We also need a marketing plan. Would that be a job for AO? I have no knowledge over marketing. Do you HR? I can take the user interface and think more of the functionalities we’ll have in our service. You HR could continue handling these issues related to Century 21st and its operating models and AO could make a marketing plan for us. Do you agree or are there some things I haven’t taken into consideration (e.g. have I underestimated some work amounts or forgotten something we still need to do)?”

HR replied that the website MA recommended was an “EXCELENT Example” and that the GVT design was “very good.” He reported that he had posted revisions to both of the files [keeping the same name but increasing the ending number by one]. He continued, “Please add your comments and let me know if you have an idea how this report has to be done, in other words, introduction, then...., then...., summary, conclusions.... <p> I will read my email tomorrow at 6:00AM my time so I can start working on your revisions all day and maybe I will be able to send something from my office thru the email system.”

In the design file, HR inserted compliments, questions, and/or ideas on each page. In the report file, HR again complimented the site MA recommended, saying they should do “something like that BUT SIMPLIER to finish the report on time.” He wrote in response to MA’s name suggestion, “I agree, Triangle from continent to continent, Joke....” In response to MA’s quote about marketing above, “I have no knowledge about marketing, and I can continue working with Century 21st. But I will need to know if you need any special information besides the one I already have, let me know to be more effective.”

Tuesday (April 11)

MA asked, “AO, have you already checked the new documents in our file sharing page? Is it ok with you if you did the marketing plan for us? HR has collected a lot of information about an existing real estate service so read the documents and if you need more information ask HR.” An hour later, she wrote that she added new versions of the documents (“There's not that much new stuff but some comments anyway.”) and wanted some feedback on the “coloring options.”

In the design file, she provided replies to HR’s questions and added more questions about certain features. In the report file, she agreed that the name would be Triangle, “unless AO has ideas.” She wrote in response to HR’s question about gathering more information: “I still don’t know.. I think AO will probably think of a lot of things as he starts writing the marketing plan. I’m sure he’ll need more information to do that.”

The Coordinator provided several clarifications and instructions to all teams about the business plans.

AO replied to MA's message, "Hi MA Hi HR, <p> Surely I can do the marketing plan! I've vanished for some days because I've been VERY busy at college, stuffed with exams and assessments. I've got pretty good texts about marketing and I'll use them to our b-plan."

Wednesday (April 12)

MA wrote, "Hi! <p> Check out the business plan I've uploaded to our site. Name is busplantempl.doc. It's the ready template we should use when writing our business plan. I tried to fill in some of the parts but it was too difficult. I was thinking we could all fill it part by part so that every time we have time so think about it we would gradually fill in the whole report. Maybe I'll have an idea after I seen some of your ideas and you can have ideas based on mine. <p> You could begin by trying to figure out under what titles all the text HR has written by now could be added. And if you have ideas what to write in our financial data part etc. I would be extremely happy - I have no idea what kind of money we would be talking about in this firm.. <p> The deadline is next wednesday. I suppose we have to be active on weekend.." MA's template file was a customized version (e.g., team member names, company name, 2 short paragraphs about the business) of the original template made available at the general GVT website.

HR replied to MA's message about marketing [where she told AO to ask HR if he needed more information]. He provided 4 paragraphs of "ideas for marketing" that would be "an example for Mexico only."

Several hours later, HR wrote in response to AO's apology, "This is not an excuse but I can not access internet from my house because there was an accident this morning and the telephone is gone. <p> I will try to get access to internet in the office tomorrow morning and add more ideas."

Thursday (April 13)

The Coordinator reminded that the plan needed to be received before 19:00 GMT on Friday to receive the maximum bonus points and clarified earlier instructions about submitting the plan. MA wrote, "AO, hopefully you read your mails before leaving for your trip.. I couldn't get your marketing plan opened.. What program should I use to open it??? Your file has no ending (like .doc for Word files.) <p> HR: did you get it opened?" [It appears that AO had sent a file to MA and HR, but not through the listserve.]

Five hours later, she wrote, “Hi HR, <p> I've added some parts to our business plan. So if you have time before saturday check [new versions of the template and design files]. I'll continue on Saturday. Can you work then?” She provided the correct file name two minutes later. [The design file was one she had already mentioned, but had not received any feedback on.]

[illegible]

Two hours later, HR replied to MA's message about the new versions that he would "check the file." He also responded that he had "not been able to open [AO's] file either."

About 12 hours later [just before midnight local time], HR told MA that he had "... loaded 2 files in the file sharing section as follows: <p> 1. [In a new template file], I added more stuff and please try to get an order on it because I added things and did not pay too much attention on the sequence. I am not very organized in the sequences. Please read my warning notes in red bolded letters. <p> I erase everything regarding AO and Brazil if you don't mind. He is on vacation and we are working hard. <p> I will do the financial section tomorrow at work and will mail it to you hopefully before 10:00PM your time. Later on will be loaded, so you can see it on Sunday. <p> Can you do something about legal? <p> 2. [In a new design file], I loaded and like it the sheet that says in the bottom "first selection" (it's the last sheet and is the one in blue colors, I think the colors call for your attention. The selection number two is the one in green colors. <p> Please do the necessary changes to what I wrote tonight. I think that about this time you are waking up, HAVE A WONDERFUL DAY!!!!!!!!!!!! <p> Saludos (Goodbye)."

In the template, HR added content (especially in the marketing area), removed any references to AO or Brazil, and provided comments or questions for MA. He asked MA to work on some areas and denoted the areas he would work on “tomorrow.” He also named MA “President and CEO” on the organization chart.

Saturday (April 15)

HR emailed via the listserve a written description of the financial projections as well as an excel workbook with estimated financial statements. He briefly explained the files and wrote, "I will load the files tonight. With this we are only need to organize the report. <p> I will not be available on sunday but if there is any problem, let me know by email." An hour later, he reported that the two files were "loaded in the file sharing section."

Week 8 (April 16 – April 22)

Tuesday (April 18)

MA reported that she had loaded new versions of the template and design. "[The revised template] is now is such a state that everything that needs your attention is written in purple and everything that is in black is already ready. So check it and every time you add something and feel that part is ready, color it black. <p> Then there is the design. I added a logo for us and the colors on first page are changed. Check it and tell me which colors should we choose (the first page colors or the darker ones on page 2 and 3). Then it will be ready. I don't think business plan needs that much anymore. Fill in as many parts as you can and I'll check it tomorrow. I add still something if I have ideas but otherwise I'll just send it the way it is tomorrow. There are some questions included in the document so please, answer them. Also I wrote something to the legal part. I think I remembered quite a lot of things so possibly we can leave it the way it is now. But anyway, see what you can do and I'll send it to [the Coordinator] tomorrow."

In the template, MA deleted some of the original template instructions and HR's previous comments or requests that had been addressed. She left some of the original instructions and added questions about what to include. She added a legal section and a loan schedule and pasted in some of HR's financial information.

HR replied three hours later that he would "check it today and let you know as soon as I complete the reading." Sixteen hours later he wrote, "I include more stuff into the final project as you requested with the purple letters except for the executive summary. <p> What is missing is the following: <p> 1. Erase the "I will do it tomorrow" that is in several paragraphs. <p> 2. Read the instructions I wrote after your comments, they are in orange color. <p> 3. Copy paste the financial statements that are in the file called "financial statements" from the file sharing section. <p> 4. Copy paste somewhere in the plan, the final GVT design, I think the one you loaded today is excelent. <p> Finally, can you send it tomorrow to [the Coordinator]? <p> Please let me know, <p> Thanks."

In the template, HR added several paragraphs of content in areas of the template that had not previously been addressed. He answered MA's questions and provided instructions for several changes he wanted her to make.

Wednesday (April 19)

MA wrote: "Just a few questions.. What do I write in Financial data part? And how about the market analysis? Did the first link to the GVT design work? How do I add the design to this document? <p> I'll try to solve these parts later today but if it seems to be too difficult I hope you will help me fill in the missing parts when you wake up."

Six hours later, MA wrote, "Hello HR! <p> The business plan is ready. I will send it to [the Coordinator]. There are still parts that I think could be better but I've had it with this task. I've been doing it for the whole day and parts of it twice as my Word refused saving and crashed after that. <p> But I think our plan is quite good if you think how quickly we did it without any knowledge over setting up a company and at least I had NO knowledge over any business/ marketing/ economy. I feel happy with the report so I think it's good enough." She explained that she loaded the file and continued, "But anyway. I think this GVT-exercise is over for us. So happy Easter! (Is it Easter for you this weekend?) Hopefully we'll pass the course.. ;)"

In the final business plan, MA added extensively to the introduction, deleted sections they had decided were not necessary, added minor content in some sections, pasted in more of HR's financial information and her websites. She did very little editing of the previous content.

MA's message to the Coordinator explained that she had difficulty with the page numbers, so none were included in the final plan. It was signed with only MA and HR's names. The Coordinator replied that the plan was received.

Thursday (April 20)

HR wrote, "Thanks MA, <p> I will go on vacation now, I will be out until May 2nd. then I will get in contact with you. <p> Thanks a lot for your work."

C.2. TEAM 2

Episode 1: Greeting/ Define the Project/ Chat Meeting

WEEK 1 (Feb 28 – Mar 4)

Monday (Feb 28)

The coordinator gave general instructions to the team about the project and encouraged the team to do the greeting exercise until their team website became available. Team members would be identified as they introduced themselves. WM (not a team member), PO, and DY each sent their greeting messages to the team 2 listserve.

Tuesday (Feb 29)

PO replied that he had ICQ (both of the others had mentioned the potential of using it), stated his hope for the team's success, and ended: "I'm waiting for more emails." MO (not a team member) and AE (not a team member) each sent a message to team 2, then the Coordinator warned that some people had sent their messages to the listserves of several teams.

Also, GO sent three messages. He introduced himself and ended by recognizing only PO and DY as team members (referring to the fact that WI had addressed his message to other teams as well). GO shared a business plan idea and expressed his desire to get started determining the topic and how to develop the plan ("this a proposal, i waiting for ideas about project investigation"). He sent a file in Spanish that contained a business plan idea (that he had created for his class). Five hours later, GO listed the name and home countries for the three active members and noted he was "waiting for the next person." He encouraged using chat and that they needed to figure out time differences and create "a plan o develop the project o.k." Before going to bed (five hours later), he wrote: "waht are you think about the meeting at chat, we need to talk about the project and i waiting yours comments.... well i will send you again tomorrow, more, less 8 eight hours o.k."

Wednesday (Mar 1)

DY addressed GO and PO, "Looks like we are still waiting for our other team member. I believe we are in a team of four...." DY reported on the business plan dates and conflicts with member schedules and presented action items for the team to address. RA had just sent her greeting message (before DY's message), so DY wrote a few moments later: "Yeeehaaah!!! <p> Welcome RA!! We have a team!!" He then repeated the action items (sort out time zone differences, select

chat tool to use, and schedule chat session), and included some files (the Exercise overview prepared by his instructor and a document describing how to create a business plan). PO welcomed the newcomers and stated, “Now that we have a team, I believe we have to get to know each other in order to do this exercise in the best way we can. <p> I’m very motivated with this.” Twenty-five minutes later, PO told them he would not be able to check his messages from Friday night to Thursday morning due to Carnaval.

Within the hour, GO sent 2 files: the winning business plan from GVT99 and the GVT template for the business plan. In welcoming RA, he explained “...we are in the process to define the project that would do....” He replied to specific comments from DY (“I hadn't time to check well your files, i hope to translate the plan and after we could take the best option, (what are you think) my idea is to finish the last week of march or the first week of april, like you wrote DY, wel,i waiting your comments.”), RA (“Don't worry about the english, I have a little problems too but i will try to improve my english written and we will try to finish this project o.k.”) and PO (“...on the other hand nejoy your carnaval and the other and i we will try to define the business plan that we will develop o.k.”). Two hours later, GO gave an example to show their time zone differences and wrote: “I believe to establish some hours that we could visit some site and we could use a chat, i waiting for yours comments, what is a day that you prefers and hour, i waiting for porposal about it, you know is very important, with this information we can do a plan to job in our project o.k.”

[The coordinator provided instructions directly to each student for accessing the team website (with task instructions and communication technologies) and the general website (that contained the membership list of the team).] Eight hours after GO’s message, DY gave instructions about how to visit the GVT Team Site, responded to GO (“GO, i have yet to unzip your business plan and read it. Once i've read it, we should all give our recommemdations.”), and encouraged setting up a chat session (“Now that we have sorted out which chat site to use ([URL for GVT Team Site]), let's sort out the time and date to chat.”). GO replied 20 minutes later trying to determine what time DY sent his message (to understand their time differences) and proposed a chat session on Saturday with specific times listed for each member. Moments later, he clarified that the chat session would be on Sunday for DY, asked what they thought of the winning GVT99 business plan, and concluded: “I waitng yours proposals of the chat o.k.”

Thursday (Mar 2)

The coordinator sent a message with several announcements, including notice that is was “highly unlikely” that their team would receive additional team members and asking the team to notify the coordinator by Monday if the team had not

heard from any team members. [Team members were originally told that they would “probably” receive an additional team member after the first week.]

DY listed “Important Absentees times” known for each member, addressed GO about the business plans (“GO, the "DARAH International Outsourcing" business plan that won in 1999 was excellent. What about your Spanish plan that u were going to translate it to English??”), clarified to GO when DY sent his last message (GO was several hours off in his estimate), and posed “THREE MAIN QUESTIONS” (“happy” to use GVT chat room?; “happy to chat on the 11/3/2000?”; and “Which business plan shall we use? Please let us know. I’ve attached 2 (one’s GO’s, one’s DY’s).”) [The files were one’s previously sent by DY and GO on writing a business plan.] DY concluded the message, “ok.. the next time i’ll be checking my emails will be on the 7/3/2000 when i get back from my State Country Indoor Hockey. I guess we will also hear from PO on the 9/3/2000. Till then GO, i guess u and RA will communicate for the time being. <p> take care.. bye...”

PO replied to GO’s last message that he could not participate in the chat session due to Carnaval (“Promise that It won’t happen again, but, as you know, here in Brasil, everything stops t’ill thursday. Hope you all understand.”); he mentioned that he had written a business plan for his job that he would send to the group later. PO then replied to DY’s last message that the GVT chat room was fine (there is no record that he actually looked at it). The coordinator sent a technical announcement about problems accessing the team building decision instructions at the website. DY provided “ACCURATE sample international times” (“I finally got the international times sorted out. Man it’s confusing.”), listed specific times for their first chat meeting, and encouraged participation in the chat session (“Let’s make an effort to our first meeting chat (I’m relying heavily on my loud alarm clock to wake me up at 5:30am!). <p> Looks like plenty of coffee for u RA. <p> Please let us know if any of u can’t make it to OUR FIRST MEETING CHAT. ‘Cause it would be very difficult if i was the only one there, especially early in the morning.”).

Friday (Mar 3)

GO ‘agreed with DY about the next meeting’ and replied to PO’s business plan comments. GO said, “don’t know if this cost we can use in the project, but i will to translate my business plan and i will send you before the meeting and after we can take the right decision of the project, I like the proposal for the next friday i will check the chat page that [the coordinator] sent for every one and i will prepare the discussion plan of our project.” PO responded 30 minutes later that he forgot his business plan was 4.5 MB, he would find another way to share that information, and “I’m sad about you, DY, that will have to wake up sp early in the

morning, but is part of the deal. <p> I'll be waiting for the news. <p> My best.” RA explained that she was having trouble accessing the GVT website, hoped it would be OK by the chat session, and “I'm waiting to meet you all.” GO responded to RA that he might have trouble getting through a firewall at work and he would try to access from home, but they had some time to communicate if the problems were not corrected.

WEEK 2 (Mar 5 – Mar 11)

Monday (Mar 6)

The Coordinator sent a technical announcement about problems accessing the website. The Coordinator then congratulated the team on finishing the first week, asked them to contact the Coordinator with the name of any team member who had not contacted the group, and stated: “Also, begin working on the Research Task; it was designed so that you could begin working even if all team members were not available.”

Tuesday (Mar 7)

DY wrote: “I guess we shall meet our first meeting chat on the time / date listed below. Is everybody happy using the GVT chat utility? <p> DY YES <p> RA ? <p> PO ? <p> GO ?” RA replied, “Friday night is OK for me. Now I can get in GVT channel. Sorry that i haven't do almost nothing. Do I have to read something before meeting. I try to do more in future.” Eight hours later, RA asked if the team was going to do the personnel selection exercise and apologized (“I'm still sorry that I haven't do much. Last week was these Lahti-Salpausselkä competitions. <p> Now we have international short film festivals here in Tampere. We are doing Festival News, which is released daily on the web <p> [URL] <p> I'm trying to do better.”).

Wednesday (Mar 8)

DY reported that he got the 24 hour computer lab pass that would allow him to attend the chat session at 5:30AM on Saturday and replied to RA that ideas about developing the business plan and allocating tasks to members would be discussed at the first chat session. DY wrote an hour later, “I've double checked on the International times AGAIN, and I reckon these are the correct times” (local times for each member were listed). GO indicated his agreement about the acceptability of the GVT chat utility (“DY YES <p> RA ? <p> PO ? <p> GO ? YES”). Moments later, he told DY that he had some problems accessing the chat room from work, but he would be able to chat from home if that did not work. Replying to GO's first message, RA indicated her agreement about the acceptability of the GVT chat utility (“RA.....YES”). PO wrote, “Now I'm happier because this new time for the meeting is better for me, because I'm still at

work at 5:30 (my qwork hour goes to 6:00) so I'll be able to make to the meeting without my boss pick up on me." He also indicated his agreement on the GVT chat room ("> DY YES <p> > RA ? <p> > PO ? <----- yes <p> > GO ?YES").

Thursday (Mar 9)

The Coordinator requested participation in survey 1.

Friday (Mar 10)

DY wrote, "it is exactly 5:30am now in Australia and just to let u know the stupid GVT chat has given me the access denied! PLEASE, it can't be happening AT THIS EARLY IN THE MORNING!!!! <p> Please give me 10 to 15 minutes to sort this sort." GO replied within 20 minutes, "we are waitng you and PO o.k. <p> RA and i are into the chat we are talked o.k."

[The chat room did not record a chat session on Friday, but GO emailed an excerpt of this session in a file attachment on March 16. The file seems to be missing some of the dialogue.] At the Friday chat session, the group discussed several topics. They asked each other what time it was to better understand the local times. On the Personnel Selection, they asked each other if they knew about the task and that the deadline had passed, and whether or not the task would be assessed. [Some of the chat log is probably missing here; they probably decided not to do it because they did not discuss it further in later communication.] On holding chat sessions, DY stated, "we have to at least do it once a week to clear things out." PO replied "I agree" and it appears GO gave agreement as well. Then they continued discussing when to have the next session, with several identifying problems with repeating the same timing. As they discussed possible times, DY wrote: "woo.... this means i have to suffer more mornings? :-0 :-)"; "PO - if we do later.. RA will be too early in the morning. but i guess RA, we have to take turns with our suffering, 'cause we r a team. <p> hehe.."; and later, "och!!! that's going to huh me, but i'm tough, i can do it at 4:30AM!!!AAAHHHH!!! consider it DONE!!!" GO suggested sending email with day/time preferences; PO replied "no, lets set this now", and DY followed, "quick RA, when is the best time. <p> set it now so make thinkgs easier." After they agreed to a day and time, DY officially concluded the meeting. [When the log ended, GO was going to work, RA was going to bed, and DY and PO were talking about their age.]

Two hours after GO's listserve message [and apparently after the chat session], PO told DY that his connection failed again, asking DY to email him to arrange a chat session. GO sent 7 messages each with the instructions from the GVT website for one of the remaining tasks.

WEEK 3 (Mar 12 – Mar 18)

Episode 2: Preliminary Research

Monday (Mar 13)

The Coordinator sent a reminder that the preliminary research task was due on Friday; the message repeated and clarified information about the task's scope, submission procedures, and evaluation. GO sent a "...file about the preliminary research, this is my proposal of business to business electronic commerce at Mexico..."; the document proposed a layout design website and company with a few, general comments about customer preferences in Mexico. GO also wrote in his message, "...DY I'm thinking about the coordinator team, I wish that but i have a lot work and i don't have time to coordinate but i believe you could be the coordinator and I don't know what are you thinking, RA and PO, but my proposal is for DY, if every body is agree don't hesitate to contact me o.k." PO replied moments later, "I AGREE WITH GO. <p> I GOT A LOT OF WORK TOO, SO I THINK DY SHOULD BE THE COORDINATOR."

DY (a) reminded the team of local times and dates for the next chat meeting (DY's time was at 4:30AM); (b) reported on the preliminary research tasks ("GO, I received your preliminary research document. I haven't read it yet, but will soon. Still yet to receive PO's and RA's."); (c) replied about the coordinator role ("Seem as though i got pushed to be the coordinator huh. hmm... see how it goes, we may have to take turns."); and (d) informed that "...although the Preliminary Research requires only 3 different countries, I myself will be doing one too. Why? Not only will I learn and benefit from it, but it will prove to my lecturer that I have put in as much effort as u guys." DY ended with: "ok.. Please do not forget the meeting chat. 4:30AM is a big call, so i expect u guys to make an effort. Our discussion will be on our next task. <p> Cheers."

Tuesday (Mar 14)

RA agreed that "DY will be good coordinator", but explained she could not attend the chat meeting because had a "...project meeting all day. Sorry." DY wrote that he would not attend the scheduled chat meeting: "Why? It is ridiculously too early in the morning. Here's how the game works. Because PO's, GO's and my time are completely the opposite (eg. am vs pm), there should be no reason why we should not continue our chat meeting at a Reasonable time. As a group, we probably find that the chat meeting was much more effective / efficient than emailing. This is because we get direct response from the chat meeting." DY suggested some "reasonable" chat times and explained, "As you can see, there will only be 3 people involve in the chat meeting. Out of the 3 people, one should

briefly update the forth party by email.” DY listed status on the preliminary research, “GO - I have received your preliminary research. <p> PO - <p> RA - .” DY then reminded, “Just to remind you guys, our next task is due next Wednesday. Please refer to the "Task Planning Exercise" and briefly on the "Status Report" which is due 2 days after the "Task Planning Exercise". Yes, as you can see, the workload is building up rapidly.”

GO replied that the timing of the last session did not work well (could not access the GVT website from work; not enough time to drive home, have the session, and come back) and proposed a new option that “is more easy to me.” PO apologized that he could not attend the chat session “today” (attending a funeral) and asked them to send him the chat log. PO also responded, “DY, don't worry about the reserch. I'll send it over as soon as I get it done.”

Wednesday (Mar 15)

PO apologized again for missing the meeting, asked DY to clarify the proposal for the next chat meeting, provided research in an attachment, and ended: “I'm waithing for the news.” DY began, “PRELIMINARY RESEARCH: <p> GO: I've got yours. <p> PO: I've got yours. <p> RA: <p> DY: I've done mine. If i don't get yours soon RA, i'll have to send mine in. So we will not be over due.” DY addressed PO (“sorry” about the death) and GO (“the times you specified below are okay to me”). DY stated, “Our next task which is the "Task Planning" is due next Wednesday 22/03/2000 (recommended, let's get this done by Monday 20/03/2000). As a group, each of us has to generate ideas by filling in the section below (please be specific especially under the ‘Business Plan Content’). Once each of us has completed the section below, email your generated ideas to our group (this) address and I will post it to our team website. This will allow us to see each other's work and come up with one solid business idea. Once we have come up with one solid business idea, we have pretty much done our next task which is the ‘Status Report’ (due on 24/03/2000 - recommended, let's get this done by 22/03/2000).” DY listed the times and dates for the next meeting and explained, “I think it is crucial for us not to miss this chat meeting because this is the "starting" point to our business plan. If we can stick to the recommended dates specified above, we should have "no worries" at all. <p> Please advise if there are any problems.”

Thursday (Mar 16)

The Coordinator explained some problems with the file sharing area. RA wrote, “Sorry, I have bad flu and I can't do anything but sleep. <p> [Idea to sell log homes.] <p> But now I can't do it. Sorry.” The Coordinator provided some solutions for the file sharing.

Episode 3: Task Plan/ Status Report

Friday (Mar 17)

DY (a) complimented the team (“Firstly, I just like to say how effective / efficient we are as a team. We have been checking / sending emails and mainly communicating at a regular basis. Please keep this up.”); (b) reported that he submitted the Preliminary Research by email and posted it to the file sharing; and (c) addressed RA (“RA, please keep your copy of the preliminary research for future references. Your preliminary research can prove to your lecturer that you have contributed as a team.”).

DY reminded about (d) the Task Planning (“This is due on the 22/03/2000, but we would like to finish this by 20/03/2000 (which is very soon!).”) and (e) the dates and times for the next chat meeting. DY (f) encouraged following “a standard guide to the development of a business plan” (referring to and attaching the file he had previously sent to be “our MAIN guide to our assignment”) and (g) listed the questions or topics from the task planning exercise with answers to all parts except the business plan content (“just to give u an idea, this is my half completed "Task Planning" exercise”).

DY’s task planning answers – Desired and lowest acceptable rank: 15 and 30, respectively. Desired and lowest acceptable grade: 85 and 65. Under task assignments: DY listed each person, suggested what sections of the plan they would address (from the guide mentioned above), and provided reasoning for the assignments based on personal background. GO and RA were assigned to work together on the marketing plan, while DY had 3 sections and “Acting coordinator?” DY explained this was a “guide or suggestion at to who will do what” and reminded “this business plan is based on a team effort and we should share and help each other at all times.” About process goals: “First draft should be completed by April 5th. (GO, I know you want to finish early 'cause your holiday trip is coming up, but if we all aim at April 5th, I believe we can get the business plan completed by the second week of April or earlier).” About sending and checking messages: “As soon as possible.” About how to use GVT technologies: “At least once a week we should engage in a chat meeting via the GVT chat site. Time / dates will be notified.” About monitoring behavior: “At the end of the day, you are able to tell how much effort one puts in. (at the moment, I am happy the way my team are performing). About unreasonable behavior or poor performance: “If not heard from a team member within a week. (Hopefully this will not happen). About consequences: “Report to unit coordinator. (Hopefully this will not happen).” About schedule conflicts: “None.”

The Coordinator announced that he would acknowledge receipt of the preliminary research later in the weekend. GO replied to DY with a proposed change to the chat time. PO replied that he was “indifferent” to the time for the meeting, but he listed a specific time when he would have to leave the meeting.

Saturday (Mar 18)

GO (a) asked DY and RA for an answer about the new chat time; (b) agreed to do the marketing plan but asked “what is the project that we will develop, please I need to know because I want to search information of our project”; (c) made some clarifications about the day and time for the meeting; and (d) attached the log from the last chat meeting.

WEEK 4 (Mar 19 – Mar 25)

Sunday (Mar 19)

The Coordinator (a) congratulated the team on completing the preliminary research task, noting contributions from GO, PO, and DY; (b) stated his intention to follow up with RA about her participation; and (c) urged them to give serious attention to the discussion of the task planning exercise.

Monday (Mar 20)

DY agreed with GO’s time for the chat meeting and wrote: “Reminder - Task Planning to be completed soon.” A few moments later, DY replied to GO that the “The Project is not yet decided,” which is why they needed to complete the task planning exercise (he repeated the process he originally proposed). GO agreed with DY that they needed to develop their business, asked for confirmation of the chat session tomorrow, and provided his answers to the task planning.

GO’s Task Planning answers – Desired and lowest acceptable rank: 10 and 20, respectively. Desired and lowest acceptable grade: 95 and 75. [both increased from DY’s.] Under task assignments: “I agree with DY within the next steps.” About process goals: “First draft should be completed by April 5th and we believe we can get the business plan completed by the second week of April or earlier.” [changed DY’s “I” to “We.”] Same answers for sending and checking messages and how to use GVT technologies. About monitoring behavior: “I’m happy with my team because we have a good communication by email and I know about their all time.” About unreasonable behavior or poor performance: “The email failures because this is our tool and the email fail for some teammates perhaps we will lose the communication but I hope that never happen.” The same answer was provided for consequences and schedule conflicts.

PO provided his Task Planning answers. – Desired and lowest acceptable rank: “1 TO 10” and 15, respectively. Desired and lowest acceptable grade: 90 and 75. Under task assignments: “I also agree with you guys.” Same answers for process goals, sending and checking messages, and how to use GVT technologies. About monitoring behavior: “I’ve heard from people of my school that they have been assigned to teams that didn’t communicate to each other till now, so I guess I’m very satisfied with my team.” About unreasonable behavior or poor performance: “None, I believe.” The same answer was provided for consequences. About schedule conflicts: “We all hope none, but it is not up to us to find out, sometimes it happens.”

DY wrote: “GO - I have received your Task Planning (but, you still have yet to complete the Business Plan Content). <p> PO - I have received your Task Planning (but, you still have yet to complete the Business Plan Content). <p> DY - I’m working on my Business Plan Content now. <p> RA - Yet to receive yours.” DY also wrote: “Remember - The section on Business Plan Content under the Task Planning exercise is your own generated idea. Once you yourself have generated that idea, I will post it to our team website in order to choose which one we should focus on. Try to get this done before our chat meeting.”

Tuesday (Mar 21)

GO provided his ideas for the business plan content. At the same time, DY asked, “what’s happening... where is everybody... My meet is at 10:30pm Tues and it’s 10:37pm. <p> I’ll wait a little longer.” Twenty minutes later, DY sent the most recent versions of the Task Planning provided by GO, PO and himself (adding his own business plan idea).

[The chat room did not record a chat session on Tuesday (Mar 21), but GO emailed an excerpt of this session in a file attachment on the same day. The file seems to be missing some of the dialogue. The session lasted an hour according to their dialogue.] At the Tuesday chat meeting, GO and DY discussed several topics. First, they discussed each of their business plan ideas, stopping to read PO’s idea when they received it via the listserve. (PO apologized via the listserve for missing the chat meeting (auto traffic) and provided his ideas for the business plan content.) They considered the GVT99 winner and some websites as examples, and finally decided to use DY’s job recruitment website idea. Then, they made a plan for DY to finish the Task Planning and Status Report and for GO to update PO and RA (and hopefully convince them). They set up another chat meeting, discussed GO’s English, and DY stated, “don’t forget your task and I won’t forget mine too.”

Just after the chat session (and before going to bed), DY wrote, “GO - "Task Planning" Completed. <p> PO - "Task Planning" Completed. <p> DY - "Task Planning" Completed. <p> RA - yet to receive "Task Planning".” DY added, “The "Status Report" will be due this Friday. I shall try and get this done before Friday. Before i hand it in, i'll have to let you guys have a look and edit any misunderstandings (which is part of the exercise). Once you guys had a looked and edited any misunderstandings, i shall then e-mail the "Status Report" to the Coordinator. <p> Once the "Status Report" is handed in, we all can start our business plan (yeeehaah!!).” PO apologized again for missing the chat meeting, asked if RA was still part of the team, and requested that DY send him the Task Planning when it was done so PO could start working on his part of the plan (“Let me know as soon as you get it done, ok ?”). GO (a) attached a file with the chat meeting log [GO mentioned it did not have all the meeting due to a problem when he copied the chat room]; (b) reported that he and DY agreed on the business plan topic (explained as “outsourcing staff services” with the URL for a potential competitor); (c) addressed PO (“PO, RA had Flu or cold, we don't know nothing about her, DY and I supposed, she didn't read the messages.”); and (d) ended: “We need to know if every body is agree with the business plan that we will develop. <p> DY:..... He is Agree <p> GO:..... I agreee <p> PO :.....?????????? <p> RA:.....?????????????” PO replied, “As always, i agree with you, my friend. <p> We can do this, but I need to take a look at the chat file in order to understand better in what business are we. <p> I'm happy to be working with people who take things seriously. <p> We'll kick ass on this business plan.”

Wednesday (Mar 22)

DY reported that he had completed the Status Report and quoted the task instructions asking for the team's feedback and corrections. In the Status Report, the business plan content contained minor edits from DY's original draft; the performance goals were simple averages (“as a group (with the absence of RA)"); and the task assignments were condensed versions of the previous task assignments and explanations made by DY, except DY traded one of his responsibilities with RA. On process goals: “As a group, we have agreed to complete our first draft by April 5th. We also aimed to get the business plan completed by the second week of April or earlier. In addition, we have also agreed to check / send emails, bulletin boards, and file sharing area as often as possible. Furthermore, we will also engage in a chat meeting via the GVT chat site. We have already engaged in two chat meetings on two different occasions, and we hope to keep this up at least once a week.” On issues for attention: “Till now. There are no problems. We are a little concern / worried about RA. The last time we heard from her was on the 16th March 2000. We all know that she has the flu, but since then we have not heard from her.”

PO replied, “I’ve read the task planning and I agree with the idea, I believe we should do it for real :o)” GO wanted to “establish all elements ... [for] DY’s good idea,” recommended doing something like [URL], and briefly compared/contrasted their idea with the other site. PO replied to GO (“my friend”) that he would look at some sites in Brazil similar to “DY’s idea” and send him the information; PO had not had time to look at the site GO recommended. GO (a) had read the status report and agreed with it; (b) heard from a classmate about another communication tool they could use but he thought: “we are doing a good job with our communication because every day each teammate sent a email and the last chat meeting, DY and I established the next chat”; (c) asked for confirmation on the next chat meeting; and (d) asked RA about her health and participation (“Please we need to know about you, if you could send to us an email.”). The Coordinator provided clarification about acceptable business plan ideas, encouraged completion of the task planning and status report, and offered some tips on file sharing.

Episode 4: Business Plan Early

Thursday (Mar 23)

DY (a) complimented the team (“We have come this far and accomplished so much. What’s more important is that we are up to date!! Less keep this up and give ourself a pad on the back.”); (b) reported that he had submitted the Status Report (to Coordinator and file sharing); (c) made “4 points” (chat meeting on Tuesday; use MS Word; “-Let’s start on our Business Plan and kick some arse!!”; reminded about the 6-8 page business plan length, the ability to use appendices, and refer to the GVT99 winner); and (d) agreed with GO that they needed to create a website similar to the one GO recommended. RA wrote she had been in the hospital, she was “still out of order,” and “sorry... I wish best for you.” The Coordinator congratulated the team on submitting the Task Planning Summary and Status Report and told them he had sent a message to check on RA.

WEEK 5 (Mar 26 – Apr 1)

Monday (Mar 27)

The Coordinator sent an encouragement to all teams to keep working, reminding that bonus and penalty points would accrue based upon when the plan was submitted. The Coordinator also reported that RA had withdrawn from the team due to her illness.

Tuesday (Mar 28)

DY hoped GO could “tackle” the marketing plan (that RA was supposed to help with), and DY would take care of her other responsibilities. DY also stated that he would not be able to attend the next chat session (no explanation) and asked to be informed and to be sent the log of the chat meeting. After waiting by himself in the chat room at the scheduled time, GO told PO he had to reschedule the meeting (wife’s car at mechanic and had to take her to school), and GO would look at example marketing plans and get back to him with the next chat meeting time. PO apologized for missing the chat meeting (boss called him at school and he had to leave class); stated, “I’m been a very bad team mate, promise I’ll make it up to you guys in this business plan.”; and said he would “wait for the news” on the next chat meeting. GO (a) sent 9 articles (as attachments) to help with the development of the market plan; (b) proposed a new chat time setup to address some of the previous problems; (c) commented, “we need to work more because we don’t have a teammate”; (d) noted other commitments he had in his job the past and coming week that would end on Friday; and (e) ended “We need to do it and we will develop this business but real after finished it. o.k. <p> Thanks for your comments above of these files.”

Wednesday (Mar 29)

The Coordinator asked them to complete the Mid-Exercise as they “pass the halfway mark.” [Member commented on RA's withdrawal -- GO ("for this reason but we are working more and we will try to finish soon.") and PO ("I'm concern about the grade, since we have a member absent").] PO told GO the new chat time was “perfect” for him and encouraged, “Don’t worry about this plan. In the beginning of the exercise, I was thinking more like a REAL business plan, which is almost like a book, this is kinda easy. <p> We’ll do just fine.”

Thursday (Mar 30)

DY said the chat time “sounds ok,” but he needed to know the day to make sure it did not conflict with classes. He reminded to “keep the Business Plan simple” and to look at the GVT99 winner to get ideas on the format. GO asked DY to let him know what days would work for the chat meeting, what DY thought about the files GO sent, and mentioned the URL of a similar business that he found today.

WEEK 6 (Apr 2 – Apr 8)

Sunday (Apr 2)

PO posted bulletin board and listserve messages because he thought the others missed a chat meeting; he asked them to let him know when it would take place.

Episode 5: Business Plan Late

Monday (Apr 3)

One hour later, DY replied that he could chat that night and apologized the “slight delay” in his reply to GO’s message. A few minutes later, DY told GO the files he sent were “excellent” for understanding competitors and getting ideas, and DY would let him know later on the latest company URL GO sent. The Coordinator sent a reminder about the survey, some general comments on the status reports, and alerted them of time zone changes in the U.S. and possibly elsewhere. DY wrote, “It’s obvious you guys didn’t get my e-mail on time ‘cause i’ve waited for an hour ... at our team GVT chat site...”, and he proposed a new chat meeting with date and times. GO explained “It’s Obvious, we didn’t understand what day was our chat meeting, my proposal was yesterday at 9.00 pm from me but i was waiting for your confirmation and i didn’t receive any email from you for this reason yesterday I wasn’t able at the net but I checked my email at 10.00 pm but i didn’t receive nothing.” GO also proposed a new date and times for the chat meeting. DY replied that that he would attend; PO did as well. GO noted they were in agreement on the meeting and said, “We will have this meeting and we will check our advances at the bussines plan, we will finish the next 15 th april o.k.”

Tuesday (Apr 4)

DY told GO, “GO, i think my time is a little off track by an hour.” and provided a corrected time for himself in the list of times. GO, apparently thinking DY was trying to change the time for everyone, changed the everyone’s time and asked each person to “agree.” PO replied, “OF COURSE I AGREE !!!!!”

Wednesday (Apr 5)

DY explained about the local times, “GO, you have got the times wrong.” and stated his time preference due to his class schedule. DY sent a second message to clarify his point about the local times and his preference. GO agreed with DY’s time calculation and the revised time DY preferred. PO replied that he could meet, just “make sure to tell me the right time for the meeting, ok ????” GO wrote that the last time schedule was correct, and he recomputed the time differences between the sites.

Thursday (Apr 6)

The coordinator reminded the teams that they were “just two weeks away from the official deadline...,” encouraged them to consider doing the task planning update, and repeated the business plan evaluation criteria. DY stated, “Excellent!! We have finally got the time and date sorted out for our chat meeting.” One hour later, DY said he had “done a little research,” provided sites as some examples,

and suggested, “One of our aim towards our business plan is to Keep It Short and Simple (K.I.S.S.). Hence, make our web site as easy as we can, therefore making it user friendly to our clients.” PO asked DY for the GVT99 winning plan.

Friday (Apr 7)

DY told PO to get the plan from GO, who provided it originally. Then he wrote, “Just to remind u guys that we had set our draft for our business plan to be completed by 5th April, it is now the 7th April. Obviously we had passed our due date. We should try and get the draft done by our next meeting chat which is on the 11th April. <p> Don't forget, handing our Business Plan early gets us bonus marks.” 30 minutes later, DY provided 2 files to read and from which to ‘get some ideas.’ He told GO that the marketing plan files were too “detailed” (“This is a very "detailed" Marketing Plan. It is good, but remember, the Business Plan we are developing is a simple one.”).

WEEK 7 (Apr 9 – Apr 15)

Monday (Apr 10)

GO sent 2 messages reporting technical problems with accessing the chat room for their scheduled chat session [probably one before the meeting and one at the end of the meeting].

Chat meeting – [The chat room did not record a chat session, but someone posted a copy to the file sharing area. The file seems to be missing some of the initial dialogue. The session lasted at least half an hour according to their dialogue.] DY asked both PO and GO to write one or two paragraphs summarizing their sections for the executive summary; both agreed. DY added, “if we can do all these by Friday... that would be excellent!” DY reminded both PO and GO individually about the paragraphs (“don’t forget...”) and mentioned Friday again (“please get all these done by Friday”). They decided that another chat meeting was not necessary. They also complimented the group (DY>> “ok.. i think we have done well for our group. especially 3 of us.” PO>> “me too” DY>> “hopefully we get some credit for tackling a business plan with only 3” GO>> “perhaps” DY>> “anyway, dont u think we are bloody effective with our communication. we only needed 30 minutes to get our message across.”). As PO was leaving, they exchanged goodbyes and reminders (DY>> “PO - good night and dont forget friday.” >> “PO - keep in touch through the email. cause we have done well as a team.” PO>> “I wont ...” >> “I ll keep in touch.”). DY asked GO a question about approach to the marketing plan, but GO did not finish an answer [apparently due to technical problems]. DY ended, “i will hear from u this friday and all the best.”

Just after the meeting, DY forwarded a draft of the business plan, explaining: "Please read and try to "gel" towards the business description." [The file listed the titles of several sections of the business plan with drafts of the sections originally assigned to DY.]

Tuesday (Apr 11)

The Coordinator provided several clarifications and instructions to all teams about the business plans. GO further explained his technical problems with the chat meeting ("...i'm feel very bad for the last chat meeting.") and wrote, "...about your question, my market plan isde to operational and some some to other quuestion i forgot, but the plna have some two ideas, if you have any doudbts or quersion please send to me and i will try to answer it. o.k." Six hours later, GO submitted his marketing plan to the group.

Wednesday (Apr 12)

GO clarified that part of the information he sent should appear in the appendix and asked them again to read the market plan and contact him with any comments.

Thursday (Apr 13)

DY provided an updated plan ("just to let u guys have a look what I have done so far (hence, editing and touch-ups). <p> I'll do the executive summary last."), addressed PO ("PO - Yet to receive you financial side."), and told GO that GO probably forgot to attach the file he said he was sending. GO resent the same file he sent earlier without comment. PO asked his teammates some specific questions about the financials and ended, "Please, answer ASAP. <p> I have the structure for the financial projections ready, but I need some more information in order to fill it out. <p> Hope to hear from you guys (SOON)." The Coordinator reminded that the plan needed to be received before 19:00 GMT on Friday to receive the maximum bonus points and clarified earlier instructions about submitting the plan.

Friday (Apr 14)

DY sent 2 messages with specific replies to PO's questions and encouraged him to make some assumptions. Several hours later, PO sent his financial projections.

WEEK 8 (Apr 16 – Apr 22)

Sunday (Apr 16)

DY confirmed that he received PO's attachments and said he would "put everything together and try to gel our work." DY continued, "I will hopefully get this Business Plan finished by the end of Monday (tomorrow), and mail it to [the

Coordinator]. <p> Once I've mailed it to [the Coordinator], I'll email u guys to confirmed that our Business Plan is completed. <p> Wish me luck." GO wrote, "receive yours email today and i wish good luck for our team, i will be available until tuesday at 2.00 pm...." PO replied that he talked to his professor, "I've talked to my teacher and he told me that I have to turn in a hard copy of the plan, so if you please, send me a copy, I would like you even more. <p> GOOD LUCK TO US , SCREENPLAN KICKS ASS." DY replied that he would finish the plan by the end of Monday, email it to the Coordinator, and provide copies to them by email and in the file sharing.

Monday (Apr 17)

Approximately 5 hours later, DY sent a copy of the final plan to the team ("The Business Plan is Completed!! <p> ... I hope the Business Plan had "gel" nicely.) and ended, "It has been a pleasure working with u guys. I have your e-mails account, so make sure we keep in touch. <p> cheers!!" The Coordinator replied that the plan was received.

The Coordinator sent a message later that day inviting the team to complete the exit survey.

Friday (Apr 21)

The Coordinator sent another message inviting the team to complete the exit survey. [DY commented on the survey: "Overall, I was pleased with our team members. Although we had to tackle the Business Plan with 3 members, we had done well as a team. Lastly, this was a very interesting and challenging unit, and I enjoyed it." GO commented: "We put our best effort to do our bussines plan, I'm happy because my team were terific."]

C.3. TEAM 3

Episode 1: Greeting

WEEK 1 (Feb 28 – Mar 4)

Monday (Feb 28)

The Coordinator gave general instructions to the team about the project and encouraged the team to do the greeting exercise until their team website became available. Team members would be identified as they introduced themselves. WI (not a team member) and JN each sent greeting messages to the team 7 listserve. JN hoped "to get an understanding of dealing with and co-ordinating group work through proper communicatin protocols and standards..." and ended: "My aim is

to be available all the time and to respond within 48 hours of emails sent to me. Some days I'm not in so I've given myself a 2 day buffer. <p> I look forward to hearing from you.” DE (a) introduced herself briefly promising she would answer the Coordinator’s greeting questions “tomorrow morning”; (b) asked for patience with her English; (c) concluded: “I know we'll be a good team (and good friends, too). I really hope so. <p> Bye!! DE :)”; and (d) asked others about their use of ICQ because “I think it’s going to help us a lot.”

Tuesday (Feb 29)

JN sent a picture of himself. JN responded to DE that her English was better than his Spanish. MO(not a team member) sent a greeting message to team 7. DE sent her formal greeting, stating: (a) “What I expect from everyone of us 5 is to learn far away from the concept of gloval virtual teams, I consider we can learn from everybody, most of all about our different cultures.”; (b) “The most important challenge is the different time zones, and (maybe) language. I hope we dont's have problems due to our diferent cultures. I propose we should schedule our virtual meetings for ICQ, because it’s REALLY FASTER than e-mail.”; and (c) asking others to send their ICQ numbers. The Coordinator warned that some people had sent their messages to the listserves of several teams.

Wednesday (Mar 1)

DL introduced himself (“This was just a small brief about me....I am very busy right now and I cant write anymore....” He (a) stated: “...I don't work because I don't have time.”; (b) informed: “Next week will be Carnival here in Brazil and I think you know it’s a big party, so I will not be available for the group. I may be available by March 14th...”; and (c) provided his ICQ number. [The Coordinator provided instructions directly to each student for accessing the team website (with task instructions and communication technologies) and the general website (that contained the membership list of the team).]

Thursday (Mar 2)

The Coordinator sent a message with several announcements, including notice that is was “highly unlikely” that their team would receive additional team members and asking the team to notify the Coordinator by Monday if the team had not heard from any team members. [Team members were originally told that they would “probably” receive an additional team member after the first week.] [DE and DL both accessed the teamsite and WebCentral.]

Friday (Mar 3)

[JN accessed the teamsite and WebCentral.] JN posted a test message on the bulletin board. JN copied the list of team members from WebCentral and sent it

to the team. DL sent a message “to remind you that I am going to travel today, but I will be back by March 14th, after the Carnival. <p> See you...”

Episode 2: Personnel Selection/ Missing Members

[The following events occur over 1 hour, 36 minutes.] DE posted a test message on the bulletin board, asking others to “Please check out some business plans to have some ideas of what we have to do. <p> Bye!! DE :).” [DE entered a chat room and opened the task schedule and team building decision instructions.] DE wrote via the listserve (subject: “WAIT!!!!!!!!!!!!!!”): “hey!!! I didn’t realize we have homework for tomorrow March/04/2000!!!!!!!!” She (a) asked them to “PLEASE” check the team-building instructions, read the resumes, and comment; (b) recommended a website on timezones; and (c) proposed that they share their opinions on the bulletin board. DE copied this message to the bulletin board, removing the website recommendation and suggesting specific local times (showing country and the number of hours ahead of her local time) for a chat meeting on Saturday. [She did not include a time for Brazil (“DL went to Carnival, remember?”).] DE then pasted the chat proposal portion of this message in a message to the listserve. Both messages ended with: “I hope my suggestion works. If you have problems or want to make some changes above, please tell me and make some suggestions, ok? I won't de mad, really :)” [DE then opened the team building decision instructions again.]

Saturday (Mar 4)

[DE logged into the chat room for 35 minutes beginning at the time she proposed for the chat meeting.] Five hours later, DE posted her rating of each candidate at the bulleting board, with a full paragraph on the strengths and weaknesses of each person.

WEEK 2 (Mar 5 – Mar 11)

Monday (Mar 6)

[JN opened the task schedule and team building decision instructions.] Three hours later, JN posted his ratings of the candidates, with a sentence on the strengths and a sentence on the weaknesses of each one. Via the listserve, JN (a) expressed: “Thanks for the wakeup DE !!!”; (b) stated he had posted his evaluation to the bulletin board, noting: “we won't hear from DL, and still haven't heard from EO.”; (c) provided his ranking and explained why it was different from DE’s; (d) asked DE to forward the choice to the Coordinator if she agreed with him (“If you want to argue with me - go for it !!!); and (e) ended “Hear you soon.” Replying to DE’s chat meeting proposal for Saturday (Mar 4), JN (a) apologized (“Sorry if I missed this. I don't have a computer at home.”); (b)

recommended sending messages to arrive by Friday night (“I’m not usually in on the weekends, but will come in if I know about it.”); and noted: “Stuff sent to me on the weekend, I typically won’t see till Tuesday. I will change if need be, we need to set some sort of schedule that’s all.” [JN looked in 3 chat rooms.] JN questioned DE’s calculation of the time differences (“I think it is +7 and +13 ??????”).

The Coordinator sent a technical announcement about problems accessing the website. The Coordinator congratulated the team on finishing the first week, asked them to contact the Coordinator with the name of any team member who had not contacted the group, and stated: “Also, begin working on the Research Task; it was designed so that you could begin working even if all team members were not available.” DE sent the personnel selection to the Coordinator; she used JN’s rankings and adapted 1-2 sentences on each candidate to justify their position. Twenty minutes later, DE asked the Coordinator if EO “is still on our team, because we haven’t received any information from him.”

Tuesday (Mar 7)

The Coordinator congratulated the team on turning in the team building exercise.

Thursday (Mar 9)

The Coordinator requested participation in survey 1.

Friday (Mar 10)

JN sent the same message to the listserve and moments later to the Coordinator. Addressing the Coordinator, JN (a) began: “You would have received an email on this already, but in case it went missing here’s a repeat.” [There is no other record that DE informed JN that she had contacted the Coordinator.]; (b) explained they had still not heard from EO; (c) expressed concern (“I’m a little worried about this as it’s just down to DE and I, as the other guy is still away at Carnival. I’m worried this will impact on our performance, especially for the next part of the assignment.”); and (d) asked: “If [EO] has dropped out can you let us know and what we should do next.” The Coordinator emailed EO directly: “One of your teammates contacted me this week because they would like to hear from you. I am writing to make sure there are no technical problems that are hindering your participation. I also want to encourage you to get involved. <p> I will contact your sponsor to see what is happening if I have not heard from you in the next day or two. Let me know if there are any issues I need to address.” The Coordinator emailed JN directly: “Based on your request, I have contacted the missing team member. If I do not hear something in 2-3 days, I will contact the faculty sponsor to address the situation. Please contact me immediately if the situation changes, and do what you can to keep the team moving in the interim (e.g., begin working

on the preliminary research task for each of your home countries).” EO replied to the Coordinator: “I am really sorry about this delay. I have been on the road almost couple of weeks and it would have been very difficult to participate this GVT project. But now it is time to work. I have read all your mails about GVT and I think that I understand how this works. I'll contact my group as soon as possible so that they know about me.”

Saturday (Mar 11)

The Coordinator sent separate direct messages to DE and JN: “I heard from EO, so he should be contacting you soon.”

WEEK 3 (Mar 12 – Mar 18)

Sunday (Mar 12)

EO apologized to the team (“I'm very sorry for this delay but as I already told to [the Coordinator], I really couldn't join this program before now.) and introduced himself (“So, I already read about your backgrounds and maybe it's better if I also tell you something about myself.”).

Episode 3: Preliminary Research

Monday (Mar 13)

The Coordinator sent a reminder that the preliminary research task was due on Friday; the message repeated and clarified information about the task's scope, submission procedures, and evaluation. DE (a) greeted EO; (b) introduced herself (“Maybe you haven't received information about us (JN, DL and me). If it so, please let us know to send you our information, so you can know us better :)”); (c) asked EO to check the website (task schedule and preliminary research instructions) and upload his individual contribution (“Would you please upload all the information you gather from your country in the "Share Files" section as soon as possible? We'll upload ours, too, so everybody can check them.”); and (d) ended: “We'll be in touch via e-mail to finish our task, ok? <p> Bye!! DE <p> PS. What does "moi-moi" mean? Is it like "bye"?” DL (a) wrote: “I am back.... <p> I am very sorry for my absence and for missing the Team-Building Decision task...” and (b) noting the “new task for Friday,” promised: “I will start immediately the research in my country and I think I will have same results by wednesday...I let you know.”

Tuesday (Mar 14)

JN replied to DL: “Pictures DL ! <p> Pictures !!!!” In a direct email to JN, DE (a) informed that she had gathered “all the information already, now I will translate it”; (b) asked JN to “put the individual team member submissions in one

document and submit it to [the Coordinator]” (“I think you would be ideal for this because you speak English too much better than anyone of us, you've seen we 3 have some troubles in grammar, right? :)”); and (c) ended: “I'll wait for your comments, bye!”

Wednesday (Mar 15)

[EO checked both websites and reviewed each of the major task instruction pages.] DE loaded her research on Mexico in the file sharing.

Thursday (Mar 16)

JN (a) stated: “I will put together the report for us to send to [the Coordinator].”; (b) asked them to “please send to me your report for this so I can put it together by Friday morning (your time, or better Thursday night). I wish to do this Friday morning, and sent it off on Friday night my time (+8 GMT).”; and (c) included a copy of DE’s direct email message asking him to submit the document. The Coordinator explained some problems with the file sharing area. JN loaded his research in the file sharing area and emailed the same document to the team via the listserve. JN addressed a clarification question to the Coordinator about the format of the preliminary research (sent separately via the listserve and directly to the Coordinator). The Coordinator provided some solutions for the file sharing. DL loaded his research in the file sharing area. JN thanked DL via the listserve, noting that he got the file from the file sharing, and stated: “I'll send it around tomorrow afternoon (my time +8 GMT) and leave it for comments before posting it to [the Coordinator] later in the evening here. Please direct any comments back to me on the final document.” [EO probably provided his contribution by direct email to JN.] [DE entered a chat room for 2 minutes.]

Friday (Mar 17)

JN sent a draft of the preliminary research to the team, explaining: “sorry for the delay, I spent a fair bit of time standizing the doc so all the paragraphs are the same format and puttings headings in etc. <p> I changed the words a little in every country (mostly a grammer fix)- especially yours EO, since I expanded some sections a little - I hope nobody takes offense to this !!!!” He invited revisions before he would send it that night and closed: “Thanks heaps & great work everyone !” Seven hours later, JN posted 2 files to the website (one containing EO’s message to JN and one was the final report) and sent same version of the preliminary research to the Coordinator and listserve. DE thanked JN for submitting the report and added: “And don't worry, I think nobody should be bothered for changing some words.... as Australian you know more about English grammer & orthography than any of us 3. You really help us to fix all the grammer disasters we write, hahaha.” DE posted a copy of the winning GVT99 business plan in the file sharing. The Coordinator announced

that he would acknowledge receipt of the preliminary research later in the weekend.

Episode 4: Task Plan/Status Report

DE noted the deadline for the next task (“I don’t like to be the first to tell this but, have you seen we have more homework for the next Wednesday March 22? I know it’s soon and we just sent [the Coordinator] our research, but what can I do?”), mentioned that she might be gone Monday and Tuesday, but she would upload her section by Tuesday. DE asked when they could chat, said she would be available this weekend, and commented the next task involved a lot of discussions (“I’ll wait for your comments. Ciao!”). JN replied: “mornings any day is usually good for me, try to give me a couple of days notice so I can rearrange other stuff.”

Saturday (Mar 18)

DE (a) explained she did not have a computer at home, which limited the hours she could chat; (b) said she could chat on Monday not Tuesday; (c) stated: “I think some of us will need to make a sacrifice (hahaha) and wake up early in the morning, so we can make a discussion group. <p> I think If one of us can’t join the rest (for any reason), the rest shouldn’t stop working for that, ok?”; (d) proposed a schedule for a chat meeting (“On Monday 20 at 2:00 AM ? I would be: <p> Monday 20 at 10:00 am (Australia) <p> Monday 20 at 4:00 am (Finland) <p> Sunday 19 at 11:00 pm (Brazil) <p> Sunday 19 at 8:00 pm (Mexico).”); and ended: “It’s just a proposal, I’ll be online in the chat room (of our site) anyway, I hope most of you can join us. I know it’s hard and pretty soon to start to work, but we could do our best, couldn’t we? <p> Please, everybody let’s make a little sacrifice for everyone, OK? <p> Bye! DE :)” The Coordinator (a) congratulated the team on completing the preliminary research task, noting contributions from all members and (b) urged them to give serious attention to the discussion of the task planning exercise.

WEEK 4 (Mar 19 – Mar 25)

Sunday (Mar 19)

[DE logged into the chat rooms for 1 hour and 56 minutes, beginning one hour before the time she proposed for the chat meeting.]

Monday (Mar 20)

DL (a) apologized about the chat meeting (“I am very sorry I couldn’t be in the chat DE scheduled. I had a problem with my e-mail and I just received DE’s e-mail this Monday morning, after the meeting. I hope someone could send me a

msg telling me what was said in the chat...”) and scheduled a new meeting (“I notice we have so little time to discuss this next step that I will be online in the chat room this Tuesday 2 am GMT. The same hour DE scheduled the day before. If anyone can be there, please...”). Nearing the proposed time, DE agreed to the meeting (“I’ll be online in a few minutes, too. <p> Bye!!”) and logged into the chat room.

Chat Meeting – [DE and DL were logged into the chat room at the same time for 43 minutes; DE arrived 18 minutes before DL.] DE confirmed to DL that they did not meet on Saturday (DE>> “I think the other guys didn’t read the e-mails i sent.”). They discussed the need to define the idea for the business plan. DE agreed to share a proposal she created in response to an assignment from her professor; it was written in Spanish and partially translated to English. They expressed concern over the other members (DL>> “...Its hard without the others members....” ... DE>> “I know it’s hard, but i haven’t received anything about JN and EO.” DE>> “JN knows we have this task, anyway. But i’m worried about EO.” DL>> “Yes...me to...”) and agreed to share the chat log with the others. DE said she might not be available on Tuesday, so DL stated: “I know you may not be here tomorow....I will read your text and talk to the group....”

DL (a) reported that he and DE chatted, providing the full chat log; (b) expressed concern about the task (“...we are very worried about this task. Our main objective is to specify what will the business do and we dont have so much time.”); (c) and stated: “She will send me a text in spanish with some ideas she had and I will think about something. If you have any ideas or some text you have prepared, please, send to the group.” DE (a) informed: “Guys, I’ve uploaded two files about the proposal I brought to my class few weeks ago, before GVT started. <p> One is in English (rough english) and the other is in spanish (more specific than the other file).”; (b) requested: “PLEASE coordinate with DL to get a big advance of this, because tomorrow i won’t be online.”; and (c) ended: “Bye! And as DL said, good luck to us.” JN (a) apologized for missing the meeting (“I didn’t go to my uni on the weekend or on Monday, so I didn’t get the messages until too late.”) and (b) shared his proposal in an attachment and at the file sharing (“Have a rad through and let me know any comments. I’m happy to go either way with Tequila or chemicals, unless EO or DL has other ideas ?”)

Tuesday (Mar 21)

DL (a) thought “...these two ideas for business (Tequila and Chemicals) provided by JN and DE are great.”; (b) concluded they had met the requirements for the task planning and should focus on the next task (Status Report) due March, 24th; (c) listed key steps (“For this task, we have to choose one of the two ideas, improve it and send it to [the Coordinator].”); (d) stated: “Chatting is the only

way we can decide this.”; and (e) proposed a chat meeting: (“I propose this schedule: On Thursday 23 at 3:00 AM ? I would be: <p> Thursday 23 at 11:00 am (Australia) <p> Thursday 23 at 5:00 am (Finland) <p> Thursday 23 at Midnight (Brazil) <p> Wednesday 22 at 9:00 pm (Mexico).”). DE (subject: “URGENT!!”) (a) refocused attention on the task planning (“I have to tell you the deadline is not on Friday 24th, but tomorrow WEDNESDAY!”); (b) determined that they needed to select one of the files to send to the Coordinator (“It's the same to me. The matter is that the one we choose must be fixed in grammar and ortography.”); and ended: “I'll wait for your answers. Bye!! DE :) <p> PS. I'll be online in the chat!!” [There is no record that DE logged into the chat room on Tuesday. This must have been a response to DL's chat proposal; she did meet him then.]

Wednesday (Mar 22)

DE wrote: “This is a more structured document about my proposal. Please check it, we'll talk about the proposals we have and decide which will be the one we'll send to [the Coordinator]. <p> Bye!! DE :) <p> PD. What about EO?” [The attachment, Tequila original.doc, reformatted her original content around the content questions of the task planning – similar to JN's version.] Within 20 minutes, EO (a) replied “Both of these ideas are very good.”; (b) stated positives for each option; and (c) said he could not chat but he would read his email. DL disagreed with DE (“Wait, <p> For the task: TASK PLANNING, we only had to put our brief files in our website. That's what is written in the instructions and that's what we did. We have three files there: Chemical Commerce.doc, Tequila English.doc and Tequila Spanish.doc <p> We only have to send something to [the Coordinator] in March 24th, for the task: STATUS REPORT”). DE posted the “Task Planning Summary” to the file sharing [same document sent via the listserve earlier in the day].

Chat Meeting – [Meeting at the time proposed by DL, DE and DL were logged into the chat room at the same time for 1 hour and 2 minutes; DE arrived 30 minutes before DL.] (a) They discussed participation in the meeting (DL>> “I think there will just us again...” DE>> “no way!.....” DL>> “What about EO?” DE>> “I've receiven an e-mail from him” [possibly the one through the listserve] DE>> “It sais he can't join us tonight” DL>> “And JN?” DE>> “It's rare JN hasn't joined” DL>> “Did he tell you he would be here?” DE>> “I haven't receiven any e-mail from him since the one in wich he sent us his file.” DL>> “Thats a problem!” DE>> “a big problem!”). (b) They discussed the two ideas and selected the Tequilla idea (DL>> “What can we do??...we have a deadline by friday...we have to choose....” DE>> “Talking about choosing, what do you think? The tequila one is OK?” DL>> “Its OK for me....” DE>> “I think due to nobody else joined this chat, do you agree to choose the tequila proposal?” DE>>

“I do =)” DL>> “I do...” (c) They determined how to tell the group (DE>> “Ok, and what is next?” DL>> “First we have to report to our group our decision....” DE>> “ok, would you sent it, please? If it comes from me, maybe it would seem i took the decision, don't you think?” DE>> “If you have time, of course...” DL>> “I can send a msg to the group....I will include this Chat Box....”). (d) They chatted about Carnival, dancing, and music (DL>> “I think I will have to exclude this part of the conversation when I send it to the rest os the group...” DE>> “hahahaha, you're right!!! hahaha. Maybe half of all this conversation is about music, hahaha.”) [There is no record that the log was sent to the group.] (e) DE said she would complete and send a draft of the status report the next day.

DL (a) reported the decision to the team (“We decided to choose the Tequila idea...we had to make the decision without JN and EO because we don't have much time.”) with a short justification and (b) stated: “We have to send a file to [the Coordinator] by Friday containing deep details, so now we should work to improve the file.” The Coordinator provided clarification about acceptable business plan ideas, encouraged completion of the task planning and status report, and offered some tips on file sharing.

Thursday (Mar 23)

JN (a) apologized (“Sorry I missed the meeting, I was working yesterday and didn't get in today (Thurs) until too late again. I really need 3 days [notice] if I can get it.....”); (b) agreed with the “Tequila decision” (“I think it has good merit.”); (c) suggested adding some of his “money making ideas” to “pad out the doc a little”; (d) promised to be at a “meeting same time tomorrow (Friday).... If you send me an email saying you're on then I'll see you there.”; and (e) volunteered to “tidy it up and send it off to [the Coordinator].” DE replied that she would meet JN and answered a content question he raised in his message. DE (a) noted that she forgot to tell them she uploaded the Task Planning Summary to the file sharing; (b) requested: “For those who still hadn't seen this document, please take a few minutes to read it, and (FOR EVERYONE) send me your feedback to improve it.”; (c) reminded about the chat meeting (“JN and me will we online at this schedule....”); and (d) ended: “Please, it could be the last time we chat before sending the status report. <p> See ya tonight!!” DE sent a “preliminary status report” to the team, invited changes, and ended: “It's just a preliminary document, please feel free to ad and/or change whatever you want. We'll discus the results of it within few hours in the chat, ok? <p> See you all tonight!!!” DE posted this document to the file sharing as well.

Chat Meeting – [Meeting at the time proposed by JN, DE and JN were logged into the chat room at the same time for 1 hour and 48 minutes; JN arrived 25 minutes before DE.] (a) They discussed participation in the meeting (DE>> “It cant be

that here are just we both. What about the others?" JN>> "Don't know, have't heard from anyone else"). (b) They struggled with the speed of the chat server, inserting times as a way to keep up with how it was working. (c) Based on files they had shared, they discussed content issues such as: proposed role in the supply chain (DE>> "ok, so it stays this way: prod --> us --> retailer --> customer ? (9:57)" JN>> "(9:58) think so..." DE>> "You don't seem to be to sure." JN>> "(10:00) allora, yes keep that value chain model" DE>> "ok, but what is allora? => (10:01)") and what market segments to target. (d) DE mentioned that she needed to finish the business plan early since the school would be closed the week of the deadline for "Holly Week." (e) They tried to understand what part 3 of the status report was supposed to cover (JN>> "(10:52) I'm not sure with point 3 where it says participation? Does that mean with our suppliers and retailer or our group 3? I think he means s&r" ... DE>> "It's like.. for example, the problems we're having to join us in a chat, and to hear from EO, for example." DE>> "Those participation problems affect the way we work."). (f) DE's lab was closing, and since she did not have a computer at home, DE said: "I'll send yoyyan e-mail tomorro at 7am ([my local] time) I promes!!!" [One of DL's email accounts would not receive messages from the listserve during this period; at least EO's message was rejected.]

Friday (Mar 24)

JN emailed the Coordinator directly to ask for clarification about the third part of the status report. JN emailed the business plan content portion of the status report to the team ("I've put it together from a basis of my and DE's plans with what we discussed this morning.) and informed: "I'll be available up to 10am GMT and again from 1:30pm GMT." The Coordinator answered JN's question directly, which he forwarded with some interpretation to DE. [From review of the 3/24 chat log, several direct messages were exchanged between DE and JN. DE sent at least 2 messages between 7 AM and 9:20 AM (DE>> "Did you see my e-mails?"); the messages apparently included: a revised status report file, a proposed team schedule, and an invitation to meet in the chat room. JN directly emailed DE at least twice (his comments on her revised status report; he sent back to her the proposed schedule she created).

Chat Meeting – [DE and JN were logged into the chat room at the same time for 22 minutes; DE logged into the chat room 4 times over a 2 hour period until she was joined by JN.] (a) On hearing from other members: JN>> "I didn't hear from EO or DL" DE>> "oh, ok." DE>> "Me neither..." (b) On issues for part 3 of the status report: JN>> "I think we've got feedback in there ... well from us 2 anyway....." JN>> "We don't have time now for EO or DL to contribute (you can put that in)" JN>> "no specific issues in our team, aprt from I never hear from EO, and not too much from DL, but you hear from him a bit, so he could say

the same about me !” DE>> “Ok, so what do i write?” DE>> “About lack of communication?” JN>> “For the computer issue or lack of response or both ?” JN>> “ok. Just put something about we've heard very little from EO this may be due to the time differences, we seem to try and get him up at 2am or 5am or something silly” DE>> “ok.” JN>> “Don't know about DL, still getting over Carnival - and I still haven't seen any pics !!!!!” (c) DE agreed to finalize the report and submit it.

DE sent a revised status report to the Coordinator and the team and posted the file in the file sharing. [The report provided the general content for the proposed business, a schedule for task completion (with a few tasks assigned to all members and the others not assigned), and issues that included content to research as well as issues for the Coordinator. Issues included: “We also have a few team issues from some team members. The most important issues from those members are: lack of participation, problems with team schedules, as well as poor communication and cooperation. <p> Other issues we have been seen have to do with technology. The chat applet supplied by GVT runs very slow, it provokes our conversations last more than two hours.”]

Episode 5: Business Plan Early

DE wrote: “When could we chat ALL (I said AAAALLLLLLL of us) again? I'll get some information about the producers. Besides we have to define what kind of Business Plan we are going to do: Marketing or Operating. <p> Without this, we just can't go on. <p> Do you agree if we chat on Monday 27 at 3:00 AM GMT? <p> I will wait for your comments.”

Saturday (Mar 25)

JN commented on the Status Report: “Brilliant !!!!! <p> You obviously spent a lot of extra time doing it.” JN replied to DE: “I will be there. <p> disregard not about not coming in on Monday. <p> This is 11am my time (which is good) and about 2am for EO - not good.”

WEEK 5 (Mar 26 – Apr 1)

Sunday (Mar 26)

DE wrote that she was having "having problems to connect to GVT, it's running very slow" and asked if others were having problems. JN replied that he had just entered the chat room ("It took me over half an hour.")

Chat Meeting – [At the meeting proposed by DE, DE and JN were logged into the chat room at the same time for 1 hour 22 minutes; DE waited for 34 minutes until

she was joined by JN.] They considered the long time to connect and mentioned the slowness of the chat periodically (inserting times as they wrote). They extensively discussed the other members and the need to find a time that might work better for them (JN>> "...anyway I'm here now" DE>> "ok, at least you are here, because I don't think EO will come..." JN>> "No, I think we should make this for another time, perhaps more suitable for him and when this is faster" DE>> "And I'm not sure about DL... I haven't heard from him anymore since Wednesday.." JN>> "ok anyway- great work with the last assignment - thanks for doing that ! DE>> "thanks to you! ..." DE>> "The problem is that i get a little mad when the other doesn't appear anywhere" JN>> "I guess I could come later if it will make it easier for the others ?" DE>> "they're are not in touch..." JN>> "I could come later in the night, or even early morning, I'm the one who's furthest away from everyone else. So if it will help I'll turn up at whatever time." DE>> "JN, thanks for that... but until now you have been the only one who has worked..." JN>> "che ???? You've been here all along as well !!" DE>> "they hasn't been in touch but you, they don't deserve you get up early in the mornings and got a bit too late..." >>"OF COURSE!!" >>"excuse my grammar.. but you know what i mean, don't you? :)" >>the matter is that this originally was a 4 members team, but it seems like it was only conformed by 2..." >> "I'm a little mad at them, they don't participate as they should..." >> "(10:11) Well, DL participated a little bit with this task, but EO... I've received only 3 mails from him..." >>"the first in which we was introducing himself, and the other two telling us he could join us to chat..." JN>> "yeah well, I don't know about that.Maybe because he doesn't like the idea of getting up early." >>"I don't mind because I'm normally up late anyway, and it's worth giving it a try" >>"Let's set one up for you guys on Tuesday, for me that will be late Tuesday night, or early Wednesday morning and see how we go" DE>>"but at least EO could tell us: "I don't like the idea", "you're crazy", "Why do i have to get up early instead you?".." >>...but he doesn't say anything!!"). The chat room was working slowly, and DE had to leave (DE>> "have to go, i'll send you an e-mail tomorrow morning 7am to me" >>"excuse me..." >>"ciao! :("

Since they were having trouble in the chat room, DE may have sent JN a direct email message with her preferred meeting time. Within 10 minutes of the meeting, JN sent a message to the listserve that he and DE "have come to the conclusion that it is obviously not a good time for DL or EO when we chat, and besides the Texas server runs like a dog at that time anyway. <p> So can we try for this Tuesday <p> DE 1pm <p> DL 4pm <p> EO 9pm <p> JN 1am (Wed) <p> I think these are the correct times. Please let me know if I've got it wrong, or even if they are unacceptable to you and we'll try again."

Monday (Mar 27)

The Coordinator sent an encouragement to all teams to keep working, reminding that bonus and penalty points would accrue based upon when the plan was submitted. JN corrected the calculation of his local time for the next chat (moving to 3 AM from 1 AM).

Tuesday (Mar 28)

JN wrote: "See you in 3 hours.....try not to late :)"

Chat Meeting – [At the meeting JN proposed, DE and JN were logged into the chat room at the same time for 1 hour 32 minutes.] (a) DE reported that she had collected 30 articles (in spanish) and said her dad had a friend who exported liquor to Finland. (b) They mentioned the other members (JN>>"I didn't hear from anybody else, did you?" DE>>"no, I haven't neither..." DE>> "That's really bad, because I had some plans for EO, about Northern Europe.. >>Today I talked to my dad, he explained me somethings about this business.." JN>> "Maybe you can mail them to him." (c) They discussed what needed to be done "according to our schedule" and how the files they had created needed to be changed. (d) They renamed the "Tequila_original.doc" file in the file sharing to the "preliminary status report." (e) They further discussed how their business would work and who its customers would be (DE>> "great advance until now! :) That's good..." JN>> "ok, you'd better go. I'll send an email around to the others and ask them to think of ideas to improve it - who knows someone may actually respond !!!!!!!"). (f) They planned the next chat meeting (JN>> "If you want to make one with DL, go for it. I'll not turn up to that one as it's a bit hard for me at this time - it's 4:30 am here" >>"But what I'll do is work on some changes and arrange a time with you later this week, maybe in the morning again for me if that's ok, we'll cut a deal !" DE>>"God, it's very late for you!! ok, ok.. I'll send an e-mail to DL." DE>>"We'll send you any advance we get, ok?" JN>>"ok - thanks" DE>>"you better try to sleep, Ciao!! :) " JN>> "Try and get EO if you can as well, it's not too bad for him at this time either, but he may be at work." (g) During their conversation, they explained Italian or Spanish words and their equivalents in English.

JN (a) reported about the meeting and invited input ("DE and I just had a little meeting. Basically for the next part of the project we need to improve our Task plan / Status report. See the next phase in the project plan. <p> DE is saying her father knows someone kind of in this business, and may be able to help by getting real life ideas. <p> We were thinking along the lines of a deal with producers and retailers. We've kind of said that already, but can maybe make it more clear. <p> Anything else would be good.); (b) asked for possible chat times (Also, do you guys have a preference for when you can chat. Obviously very early in the

morning is no good, and probably not during the day when you're at work either. Send some suitable times (GMT) for you so we can get together."); (c) included a copy of the status report.

Wednesday (Mar 29)

The Coordinator asked them to complete the Mid-Exercise as they "pass the halfway mark." DL wrote: "I will be available for chatting from 1 am to 3 am (GMT). Send me a msg telling what time should I be there, please." DE proposed two chat meetings, listing the country, dates, and local times ("I propose 2 schedules, choose whatever you like, I'll be in both anyway. PLEASE send me your comments about at what of the 2 proposed schedules can you chat, ok?"). DE corrected the days for the second proposal. DL wrote: "I will be in the chat you have scheduled for thursday..." The Coordinator directly emailed DL about a problem with one of his accounts subscribed to the listserve ("Your email account was experiencing problems that may have caused you to miss email messages from your teammates. I have added back your account to the listserve hoping that the problem with your account is fixed.").

Thursday (Mar 30)

DE waited in the chat room for 39 minutes during the first chat meeting she proposed [seemingly the one DL agreed to attend]. Four hours later, JN wrote: "DE, I'm sorry I won't be able to make that one, but can be available Sunday from 4am GMT. That may be bad for everyone else, but if you sent me the transcript I will act on any bits." The Coordinator congratulated the team on completing the status report and commented: "You made a general statement about lacking team member participation; let me know if there are any specific members I need to follow up with."

Friday (Mar 31)

DL blamed his absence on the GVT listserve and chat room ("I sending this msg to tell the group I have received a e-mail from [the Coordinator] saying that there is a problem with the GVT e-mail. He said that because of this problem I missed almost all the e-mails from the group this week. That's why I wasn't answering the group msg. <p> He said the problem is not totally fixed yet, I may still have this kind of problem this weekend. <p> I also had problems with the chat thursday.... That's why I wasn't there. Sorry." [There is no evidence he attempted to log into the chat room.]) In an email direct to the Coordinator, DE (a) expressed concern about DL ("Today I received an e-mail from DL, telling me that you sent him a message referring to some problems with the [team's listserve]. He tell us that maybe that's the reason he hadn't received some of all the mails JN and me have sent. Ok, I understand this and I'll be "personally" in touch with him.) and EO (But still haven't heard anything about EO since the last 1-2 weeks. He doesn't respond

to our messages not our virtual meetings.); and (b) ended: "Would you recommend us anything? Could you tell us what's up with EO? <p> I'll wait for your comments as soon as possible."

DE emailed all members and the listserve: "Please, remember that we have individual task to accomplish, and the deadline is on Sunday. <p> Please sent everyone your results and upload them to the File Sharing section, ok? <p> AND PLEEEAAASE! Keep in touch. <p> bye! DE :)" DE (a) began: "Hey, we all need to chat, we have a lot of things to talk about, define somethings about us and the Business Plan, a new schedule of work, and one of chatting, too..."; (b) proposed a chat meeting (name, day and local time); and (c) ended: "I hope E-V-E-R-Y-B-O-D-Y will be there (you know what I mean and who I am talking about)." Within 7 minutes, EO withdrew from the team ("I am really sorry but I can't go on this gvt project because right now I am so busy with my work that I don't have time enough for studies and for this project as you probably have noticed. And it would be unfair to let you do most of works just because I'm busy. I wish you luck with this gvt project!"). EO sent a similar message directly to the Coordinator 20 minutes later.

Saturday (Apr 1)

JN forwarded EO's message to the Coordinator and copied DE: "[Coordinator], what do we do with this situation. We thought as much since we haven't hear from him." JN replied via the listserve: "Sorry to hear that EO, <p> Good luck with your work and studies !" Nine hours later, JN wrote: "You got the news on EO, I suggest we carry on as normal, we weren't using him anyway :(<p> I'll chat to you soon (9am)....." The Coordinator wrote to the listserve: "As you know, EO has decided not to work with your team. I am sorry about this. Please do your best with the remaining teammates. You should still be OK with 3 team members." The Coordinator replied directly to DE's participation message (Mar 31): "DL logged into the website a few days ago, so I assume he will start to do more. Let me know if there continues to be a problem."

WEEK 6 (Apr 2 – Apr 8)

Sunday (Apr 2)

Chat Meeting – [At the meeting JN proposed, DE and JN were logged into the chat room at the same time for 5 hours 7 minutes. DE logged in 39 minutes before JN.] (a) The vast majority of the conversation involved defining the concept for the new business (e.g., whom they were trying to remove from the current supply chain, how to create new markets, what countries in which to operate, how to add value to the existing supply chain, whether or not to take possession of the goods or just act as a marketplace) and identifying what needed

to be included in the business plan (e.g., focus on marketing issues, listing potential customers and suppliers). (b) During these discussions, they referred to other documents (business plan template) and websites (Seagrams) as examples and guides. (c) They briefly mentioned the message from the Coordinator regarding EO's withdrawal (JN>> "Just got a note from [the Coordinator], you would have got the same - pretty lame I thought...." DE>> "yeah, but it's the same for us anyway, don't you think?"). (d) They discussed a chat issue (change in Daylight Savings time) and agreed upon 3 potential times for their next meetings (one planned for sure). (e) JN acted playfully at times (DE>> "What i was going to tell you was that..." JN>> "you're going mad ?" JN>> ":)") DE>> "We could take the chance on liquor brands that have the best delivery chain in several countries, and..." >>"No, I'm not going mad, why? did I write something wrong?" >>":(Sorry if i did , i didn't mean it, really. excuse me..." JN>> "no hahaha, I was tryin got guess what you were going to say next... ok.... they are....? This is good, it adds weight to our chances since we can focus on the most profitable routes..." DE>> "hahahaha, hey, I was starting to get worried!! don't do that, hahaha ;) I don't know when you're mad..." JN>> " 'mad as in going insane...not gettng angry...' " DE>> "hahaha, then I mean both!! hahahah"). (f) They made plans for DE, possibly with DL's help, to continue working on a document JN finished drafting while they chatted (DE>> "Are you tired? do you want us to chat other time?" >>"It's 3:47am for you, right?" JN>> "yes and yes please" >>"I'll send you something - hang on" DE>> "sure..." JN>> "It's the new task planning summary II" >>"I put it together from the original and the status report" >>"It has what we talking about and some other stuff I thought up" >>"Can you (hopefully together with DL) finish it off with our new proposals and post it to our web site with the others. The name needs to be kept the same." DE>> "ok... To be honest I don't think DL is going to work, but ..." JN>> "It's due 8 April with a April 5 start date, but I'd like to knock it off so we can get on with the primary task and have that done real early and hopefully claim maximum early bird points !" >>"Well if he's not I'd like [the Coordinator] to know. I don't mind being here stupid hours, but don' " >>..don't think it's fair just you do all his work for him....." JN>> ":)" DE>> "you're right!..... I agree with you.... :)"). (g) JN expressed concern about DE's workload (JN>> "If it's too much please say so, I don't want you doing all the work on your own - hopefully that doc is nearly complete now ?" DE>> "too much better... hahaha" JN>> ":|" >> "ok ?" DE>> "Don't worry. It's ok..., really. I'll have time to do that...." JN>> "Hopefully it won't take you too long :)").

JN sent the draft of the Task Plan Summary II directly to DE.

Monday (Apr 3)

The Coordinator sent a reminder about the survey, some general comments on the status reports, and alerted them of time zone changes in the U.S. and possibly elsewhere. DL wrote: " I am sending this msg to report the group that there is a file in the File Sharing with some Tequila Wholesalers in Brazil."

Tuesday (Apr 4)

JN wrote: "Up for a chat in about 1.5 hours => GMT 3pm ? <p> Hope to see you soon." JN sent "a couple of emails today" directly to DE (including articles on a distributor in Africa and "Australian B2B"), which she confirmed receiving in the meeting.

Chat Meeting – [At the meeting they set during their last chat session and possibly revised in time by JN's message to the listserve, DE and JN were logged into the chat room at the same time for 3 hours 55 minutes. JN logged in 13 minutes before DE.] (a) JN greeted DE ("Hi" >> "" >> "Wasn't sure if you were coming.....good to 'see' you"). (b) DE explained that she had not finished the Task Planning Summary II because she was sick yesterday (JN>> "hate that !" >>"being sick that is !!!!") DE>> "oh, ok.... :)" >>"But I'll finish it today, and I'll upload it... really.."). DE edited the document (inserting changes in green) and sent it directly by email to JN. JN read it, they discussed some changes, and JN asked DE to finalize it ("Can you make the changes then put it on our site - thanks, no need to ask me on any final bits, I trust your judgement, and I'd like to focus on the BP side of things if [we] could please."). DE sent the document directly by email to JN, and JN posted it on the website. (c) They briefly mentioned DL three times, regarding: DL's file (DE>> "Could you see the things DL sent? Because I couldn't yesterday, I had to go home..." JN>> "Yes I did" DE>> "and how good is it?" JN>> "All it contains is 5 names of wholesalers - that's it !!!!"), assigning responsibility for work (JN>> "Not Brazil ?????") DE>> "Yes! Brazil too! But DL should be in charge of that, not you, it wouldn't be fair for you.... :)", and JN asking DE to contact DL. (d) DE posted the winning plan from GVT99 in the file sharing as a comparison (DE>> "I was comparing what we have and what the last GVT winner had..." JN>> "and(" DE>> "And we have a lot of numbers, list of names from our customers..." >>"that's good!" DE>> "I mean, all that information we have add... like "realism" to our project...." >> "I've done BP before.... and that's one of the most important things here... really..." JN thought they had already lost when DE mentioned this file, they exchanged (DE>> "don't worry.... ;-)" >> "We'll win this one.... :)" JN>> "You beauty !"). They later exchanged (JN>> "... Yes [the GVT99 winner] - quite comprehensive. I like the way the appendixes focus on each country..." >>"I don't think we'll be able to do the same since it's effectively just you and me!" >>"I had a chat with other sin my class they are having the same problems of just

not hearing from people, but they haven't had dropouts !” DE>> “mmm, yeah.. and MAYBE Brazil.” JN>> “that's others in (not other sin)”. (e) Other content topics included: information from DE’s father about the tequila business, information from the articles JN provided (history of the tequila crisis in Mexico), with whom their business should partner, and countries of operation. (f) They discussed what each planned to work on and agreed to chat later in the week. (g) They ended (JN>> “ok let's part ina proper manner....” >> >>“nos vemos” DE>> “hahaha And what should I say? bye or ciao?” >>“what should i say' tell me... :)” JN>> “either is ok” >>“chuse ?” >>“German” >>“or aufwiederstien” >>“nos vemos !!!!!!!!!!!” DE>> “no, I like Italian sayings more....” >>“ciao!” JN>> “ciao !”).

Wednesday (Apr 5)

[DE checked the chat room twice, 51 minutes apart.]

Thursday (Apr 6)

The Coordinator reminded the teams that they were “just two weeks away from the official deadline....,” encouraged them to consider doing the task planning update, and repeated the business plan evaluation criteria. [DE checked the chat room twice, 10 minutes apart.]

Episode 6: Business Plan Late

Friday (Apr 7)

JN wrote directly to the Coordinator and copied DE: “We appear to have lost another from our group. (DL #3107) <p> I haven't heard from DL for over 3 weeks, save to say he'll meet us on-line one time and I never saw him. <p> DE and I can keep going, but wish to have this noted....and possibly taken into account in grading.”

Saturday (Apr 8)

Chat Meeting – [DE and JN were logged into the chat room at the same time for 2 hours 50 minutes. DE logged in 4 times over the 1 hour 41 minutes preceding the meeting. There is no record of setting up the meeting, so they may have exchanged direct email messages.] (a) They discussed the website of a potential “competitor.” (b) JN asked DE about a friend in Europe [must have been mentioned in a direct message], and DE said she would receive information in 1-2 days. (c) DE directly sent a file with translations of 3 articles written in Spanish; they discussed this information and she agreed to translate additional articles later that day. (d) Earlier JN sent a draft of the executive summary directly to DE (DE>> “WWWOOWWWWW!!! you're a marketeer...!!!!!!!!!!” JN>> “Now that's a reaction !” DE>> “hahaha” >> “I liked it very much... yesterday's night I

was elaborating some info for the BP, but not exactly for the Ex Sum.” >> “we could add somethings of what i have... just to ...” >> “I cant' find this word, in Spanish it's like suport your ideas... I don't know how to explain it..” >> “it's very interesting you Executive summary, I liked it very much, really... :)” JN>> “to support, or to give evidence....”). DE sent it back to JN directly because he had lost it. (e) DE directly sent links to explore for selected countries. (f) JN asked clarifying questions about a graph DE provided directly on tequila exports. (g) They discussed content issues such as countries of operation, how customers would access their website (JN had provided a mock up of the site directly to DE), and the value they would provided to customers.

(h) They discussed what they heard from classmates about other teams (DE>> “Do you know anything from your classmates? I mean, about their GVT teams...” >>“=”) >>“Are they having problems, or everything is alright with them?” DE>> “BY THE WAY! Here almost everybody knows when is their GVT mates' birthday!!” >> “When is yours? Mine is October 16th” JN>> “I spoke with one girl in my class, apparently her group has done NO work and [the Coordinator] keeps writing messages saying the task planning and prelim research is not done - why ???” >>“b/day 28 April” >>“Also another guy hasn't heard from any of his other people for weeks !” JN>> “I think almost everyone in the class has had trouble, we all complain every week. Except I say what a brilliant girl I've got in Mexico !” DE>> “AWWWW, you're lovely!! Thanks!!!!” >>“Many of my friends also have problems with their mates from Findland.... and from Brasil, too...” >>“but there are others that tell me everuthing is perfect within their teams.....” >> “Anyway...” JN>> “Finland seems to cause the most problems-funny really since they have two of the biggest telco's in the world for only 5M people !!!!” >>“I heard this is worth 50% of your mark, is that true ?” DE>> “ha ha ha ha ha ha ha ha - that's ironic hahaha” JN>>“For me it's 30%” DE>>“i don't remember exactly... but i know its more than 30%...” >>“Maybe in Finland this rproject is not part of their mark...”). (i) They showed excitement about their work (JN>> “I like the sound of this. The more we talk the greater chance I think we have of doing really well and may be even winning !” >>“I think our idea is really good !” >> “Of course other teams will have good ideas as well :(”). (j) They contrasted their way of working together with other possibilities (DE>> “.. what most of them use to do is just: "member1, do this section, member2, this other section, member3, you fo this oder...” >>“not fo, but do.. :) ” >> “hahah, not oder, but other, hahah” >>“to be honets, that's a threat for them, becasue they can't integrate very well their ideas...” JN>> “That works well where the area's are clearly defined, but in a project like this I think that's too hard” DE>> “I mean, they work by separated..” JN>> “that's right very hard to integrate because they are too dissimilar or too much overlap” >>“I just did a project where that type of separation worked really well, but this is different.” DE>> “maybe it will

sounds cruel but..." >>"...and being just 2 people like us is better for us, i think... :)" JN>> "... Two people is good, si, but having a third to input other ideas would be helpful. whenwould you like to meet again ?"). (k) They scheduled their next chat session, said what they individually would work on until then, and thanked each other "for this evening."

JN sent time for the next chat session via the listserve ("Please attend, or inform of a better time.")

WEEK 7 (Apr 9 – Apr 15)

Sunday (Apr 9)

DE directly emailed some questions to the Coordinator about the format of the business plan. DE checked the chat room once. The Coordinator replied directly to JN's message about DL, with a copy to DE ("Have you heard from DL now? He logged into the teamsite today, so I am wondering if he contacted you also. Let me know either way, so I can follow up.")

Monday (Apr 10)

JN replied to the Coordinator with a copy to DE ("Sorry [Coordinator] - have not heard from him. <p> We have arranged another meeting an sent him a mail on it for Tue 1:15 GMT. I'll be in contact if we get no joy there."). The Coordinator answered DE's business plan format questions. The Coordinator contacted DL, accidentally twice with one copy to the team ("One of your teammates contacted me Friday because they are concerned about your recent participation. I am writing to make sure there are no technical problems that are hindering your participation. I also want to encourage you to get involved and work out any issues with your team. <p> I will contact your sponsor to see what is happening if I have not heard from you in the next day or two. Let me know if there are any issues I need to address.") The Coordinator replied to JN: "I went ahead and sent a message to DL about it. Please let me know in a few days if you have heard from him. It may be difficult for him to participate in chat, but he should be able to get involved through the listserve." DL apologized to the team ("I am very sorry about my absence.... <p> At first, I still have [problems] with my e-mail. The second problem is that I was in examination time. It's been a very busy time for me; I only checked my e-mail about 3 times a week. I had classes all the days you have scheduled a chat; next Tuesday I will have a very hard finance examination, so I don't know if I will be in the chat." DL sent the same reply directly to the Coordinator, but excluded his explanation about the chat meetings. The Coordinator directly wrote to JN: "I heard back from DL today. He has had various problems, but it sounds like he will get involved." The Coordinator wrote directly to DL: "Sorry to hear about your difficulties. I assume from your

comments that you will begin getting more involved now that your examinations are over." [In the chat conversation on Tuesday, they mentioned that JN had sent a draft of the business plan.]

Tuesday (Apr 11)

JN replied to DL via the listserve ("Sorry to hear that DL, <p> I'd probably do the same in your position ! <p> Hope you can make it even for a while. DE and I have it quite well covered, it's just we don't want to see you lose out for lack of participation. <p> I'm sorry to hear that your school has put such bad timing on you with this :(<p> We'll send you some stuff tonite."). JN (a) sent a revised business plan file to DE via the listserve based on 2 files she had sent directly; (b) asked her to read it before the meeting; and (c) invited any kind of feedback from both DE and DL. [The file contained a 9 page draft of the plan with notations for areas that needed to be added, clarified, or examined more closely.]

Chat Meeting – [At the time agreed upon from their last meeting, DE and JN were logged into the chat room at the same time for 6 hours.] (a) They agreed that Friday was their "deadline" to finish. (b) DE directly sent JN 3 files (ideas for the market plan section, comments on Monday's business plan, transcript of a previous chat session), which he read and they discussed. (c) JN directly resent the "sample site page" and provided a revised business plan at the completion of their meeting (and posted it on the website too [later deleted]). (d) They referred to business plan document, the "sample site page," and some websites as they discussed several content issues (e.g., expected sales volume, how to ship the tequilla to wholesalers, whether or not to maintain inventory or just act as a marketplace, how they would add value, core competencies, etc.). (d) As they worked, they exchanged information about local beaches, mountains, the weather, and phrases in other languages. (e) Other exchanges recognized expertise or provided compliments (JN>> "I've said that in the doc....." DE>> "THAT's WHY I TOLD YOU YOU'RE BRILIANT, JN!!!!" >> ":9" >> ":)" JN>> "tell everyone" >> "anything else....?" DE>> "ha ha ha ha ha - I've already told tht to my classmates, don't worry hahahaha."). (f) Each said what they would individually work on next, and they set a time for the next chat session on Wednesday. (g) They ended (JN>> "I'll bring some financial stuff and hopefully we can hit this dog on the head !" DE>> "ha ha ha yeeaaaaa!!!" >> "ok ok, enough hahaha" JN>> "Ciao seniorina" DE>> "I'll let you sleep, then, it's late...." >> "Ciao bambino!!")

The Coordinator provided several clarifications and instructions to all teams about the business plans.

Wednesday (Apr 12)

JN sent a draft of the budget, mentioning expected profits, inviting review of his assumptions, and reminding of the next chat meeting that night. JN informed that he loaded a draft of the business plan in the file sharing.

Chat Meeting – [At the time agreed upon from their last meeting, DE and JN were logged into the chat room at the same time for approximately 6 hours 10 minutes. Their session was interrupted in the middle by a server problem, but they continued after that.] (a) At the beginning of the meeting, JN sent directly to DE a revised budget file and uploaded it the file sharing. They discussed many detailed issues for the budget: how to charge their customers (i.e., calculating revenue for the budget); rent, shipping, and tax expenses; and expected profits and ROI. JN then uploaded the revised version. (b) Earlier, DE had sent her comments on the business plan directly to JN. They discussed several content issues on the plan, breaking at one point for possibly 20 minutes for JN to call some local companies about transportation issues. (c) JN sent 1 message with some opinions directly by email because the chat applet was working so slowly. At a later point, the server kicked both of them out of the chat room. JN sent an email directly to the Coordinator to fix the chat room. The Coordinator replied within 20 minutes: “I just archived the chat logs in case that was causing problems. You can try again to see if that helps....” DE and JN resumed their meeting, and JN replied to the Coordinator after the meeting: “It's all fixed and running fine.”

(d) They discussed what names to include on the business plan (DE>> “and what about that othr one? hahaha” >>“AKA candidate E?” JN>> “partner E ? I don't know what else to add.....partner DL doesn't seem like a partner to me....” DE>> “I was forgotten about him already, hahaha, do we really have to include him?” >>“not was, but had” >>“youre right, i dont know waht happened to him..” JN>> “Not if there's no contribution. a class mate just said his Brazil girl has left to go on holiday and he asked [the Coordinator] if he could take her out of the team, but [the Coordinator] said no” DE>> “the 2 chats we had were very good..” >>“WHAT???? HE SAID WHAT???” >>“HE’S CRAZY!!!” >>“i dont mind if he reads this...” JN>> “hahahaha” DE>> “that was more or less what i told you, he practically told us go on go on, go on , but what about he people the does work like us?” JN>> “Actually my teacher said the same "just do what you can..." duh:(" DE>> “that's bad... very bad....” >>“our teachers told us "if there is any problem, just let him or her go" " >>“but now the problem kid is [the Coordinator], isnt he? hahaha” JN>> “hahaha” >>“ok - I've got some more no's can you wait again for a while....I'll try again...” DE>> “[Coordinator], if youre reading this.... Im just kidding....” >>“ok” >> “hahahaha” DE>> “about each of us 3.....” >> “we are 2, arent we?” >> “are going to include DL?” JN>>

“ummmmmmm I was thinking you , me and letter E....no D” DE>> “we'll talk later about him...” JN>> “ok”). (e) They discussed their individual situations, such as being tired or busy (DE>> “JN... sorry, i cant focus anymore.... i feel very tired....” DE>> “how can you take studing a master, working at an office, working as a DJ on the weekends... and this girl?” JN>> “You go home, I know that 3am feeling very well, and it's too hard to focus.... !!!!” >> “just call me superman !!!!” DE>> “ha ha ha ha ha ha ha ha ha” JN>> “I don't always work at the office, so I sleeptill 12pm most days !!!!”). (f) They agreed on a time for their next chat [may not have been clear about which day].

Thursday (Apr 13)

JN wrote via the listserve: “Hi all, <p> DE and I are nearly done. <p> I've just uploaded the last docs to our web site. <p> bpJN.doc & budget.xls <p> any comments. <p> Next meeting to finalise doc before handing in is Thursday 1pm GMT. <p> Don't forget to get max bonus early points we need to hand it in by 7pm GMT that day !!!!” [Just 4 hours and 33 minutes after the last session ended, DE logged into the chat room before the time they discussed (probably at home using the laptop she borrowed). DE referred to a message JN sent her, probably a direct message with the revised business plan he had posted on the website. She remained logged in for 1 hour and 15 minutes, but JN did not appear.] The Coordinator reminded that the plan needed to be received before 19:00 GMT on Friday to receive the maximum bonus points and clarified earlier instructions about submitting the plan. DL (a) said, “I read the Business Plan and all the files you have sent and I think it's excellent. I very sorry I couldn't be a greater part of it. I wish I did more than I did.”; (b) explained, “I couldn't be in the in last chat because I had classes that hour and besides the problems with the delay of my e-mail I had examinations that kept me very busy.”; (c) inquired, “I know I you have all covered I and know will have a lower participation grade, but I want to know you consider that I am still a group member. <p> I notice the deadline is coming but please tell me if there is something I can do...”; and (d) ended, “PS: DE, I didn't forget your MP3, I have just found a CD and I will transform it to MP3 and send to you as soon as possible.” DE probably sent JN a message scheduling a chat for the next day at the same time.

Friday (Apr 14)

Chat Meeting – [Near the time (but not the same day) agreed upon in their last meeting, DE and JN were logged into the chat room at the same time for 1 hour 4 minutes. DE checked one time an hour before JN's arrival; she came back later and waited 31 minutes until JN arrived.] (a) JN apologized that his lecture went overtime, then they exchanged (DE>> “How are you?” JN>> “bene grazie” DE>> “Where have you been? I was worried, you know?....” >> “:)” JN>> “I didn't think we had another mtg until now so have worked from home :(”

DE>> “dont worry, i'll be available until the deadline...” >>that's good, i guess :) ”
 JN>> “me too ! Don't you have to go off and work ?” DE>> “I'm ill... you know?” >> “I caught cold... i dont' feel very well” JN>> “arrgghh stress from this caused that probably.....Let's do your budget thing first please..... can you keep going ?” DE>> “besides there is not too much to do at work today.... it's ok...” >>“Sure!” (b) They discussed costs for labels and packaging and its impact on ROI. (c) DE reminded that the deadline for maximum points was approaching (“we have just 3 hours I guess”). Several lines later, they discussed JN leaving the meeting (JN>> “I have to leave for about an hour !!!!!” >>“I told someone else that I would see them by 10:30pm my time. Assuming you would be gone till about 1am my time....” JN>> “I worried that when I get back we will run out of time....” DE>> “I wont be gone at 7pm GMT... the point is that id' like us ..” >>“to send it before 7pm GMT”). (d) JN uploaded the latest copy of the budget in the file sharing, and DE said she would look at that and country specific issues while he was gone. (e) They ended (DE>> “ok, thanks, and tell those guys goure goint to meet that we will win...” JN>> “bye...back soon hopefully.....hahahaha ok” DE>> “tell them to let you come back here, hahaha.”

Chat Meeting – [DE logged in 1 hour after the previous chat and then waited for 63 minutes until JN's arrival. They were in the chat room together for 7 hours 21 minutes. Points (a) through (d) occurred in the first 2 hours and 20 minutes, before the early deadline.]

(a) At the beginning of the meeting, DE direct emailed 2 messages with files containing information on countries and core competencies. JN reviewed these documents and inserted that information into the business plan along with other editing and additions they discussed along the way (e.g., mission statement). JN also looked at the budget while she continued reviewing the business plan. (b) As they approached the deadline for the maximum bonus points, they periodically discussed the time (DE>> “no no no, i mean we just have 20 minutes to sen it...” [skip 1 entry] JN>> “no we dont.....it's not due till 7pm GMT it's only just now 4:30pm GMT” [skip 2 entries] DE>> “WAHT!!!!!!!!!!!!” >>“ha ha ha ha ha” >>“wait..” DE disconnected. JN>> “DON'T STRESS !!!!!” >>“I would never have left if it was that close !!!!!” [both disconnected for less than 20 minutes, presumably due to a server problem; skip 12 more entries] JN>> “4 hours to go.....” DE>> “4 hours? are you sure? because like 2 weeks ago GMT was 7 hours after Monterrey's” JN>> “well it's -8 here so that means dope 3am - sorry 2 hours !!!!!” >>“now panic !!!!!” DE>> “no no - it's ok - anithing more than 20 minutes is ok, believe me.. hahaha” [skip 72 entries] JN>> “1:15 to go” DE>> “ok” [skip 30 entries] DE>> “1 hour right?” JN>> “si....I think we might be in trouble :(” DE>> “yes, that's why we have to handle the situation...” [skip 27 entries] DE>> “--> 50 mins” [skip 84 entries] DE>> “how many pages have

we?" >> "10 mins!" JN>> "heaps - also check pg 8 !!!!!" JN>> "forget the time - we're cooked !" DE>> "of, dont worry, if we just cant finnish it for our 10 points, lets improve it to assure the rest of the points..."). (c) DE deferred to JN's knowledge of English (DE>> "shouldn't it be eliminating?" >> "to be coherent with the syntax -" JN>> "not in this context - trust me...there are words prior to that..." >> "syntax" DE>> "ok, trust you... :)" >> "ah! yeah, thanks ! :)"; [later on] DE>> "You know Eanglish, if yot think it is understood , then leave it that way :)"). (d) They sometimes congratulated one another (DE>> "well done!" JN>> "...to you !" DE>> "grazie!" JN>> "ok SWOT me !" DE>> "ha ha ha ha.. I'll do a BP for about you then ...?" >> "ha ha ha" JN>> "ok ok").

(e) They continued editing the business plan. JN directly sent DE an updated version ("I've just sent you the latest copy of the BP. Your one is too old now - we've made too many changes....follow on with this one when you get it.."). They continued the plan discussions (e.g., travel costs to visit customers, shares on NASDAQ) and later on the financial budget, but with more frequent diversions to topics that were not directly related to the content of the plan. They compared their format and content to the winner from GVT99. JN uploaded the revised plan and financials to the file sharing. They discussed what still needed to be done (mostly by DE while JN slept) and the possibility of chatting again in 7 hours. (f) At times, they tried to understand what they other one was feeling (JN>> ":" DE>> "why that face?" >> "I'm still learnign to interpret how you feel, hahaha" JN>> "that's my waiting face (well for now anyway)" >> ":" DE>> "ok" [skip at least 125 entries] DE>> "you must be laughing at me, aren't you?" >> "ha ha ha ha" JN>> "why wold you think that - yes I am but why do you think that ?" >> "ahahahhaa" DE>> "ha ha ha ha" JN>> ":D" DE>> "at leas you're honest.... ha ha ha ha ha ha ha ha ha"). (g) They talked about whether or not to continue working then (DE>> "It's too late for you..... do you want to finishit now? or you prefer it to finish it tomorrow?" >> "i have it here..." >> "you must be very tired... sorry =:(" JN>> "No if I leave now we'll lose anothe day !!! and another 2% !!!!!" [skip 43 entries] DE>> "(**JN.. really, its 4am for you.. do you want to sleep at leas 2-3 hours and continue? **)" [skip 1 entry] >> "we wont lose more points..." >> "when you get up we'll be on time... really..." >> "it's not for me, but for you...:)" JN>> "I'm fine...let's at least get to the end of this then see...." DE>> "ok then.."). (h) They frequently taught each other words from other languages. Other diversions included a brief mention of JN's trip to Italy (JN>> "no really I'd love to tell you - promise we'll chat about it later, but I'm starting to get tired and we're nearly there !!!!"), viewing an online picture of the beaches in Australia (DE>> "I know we are having fun.. but.."), and JN directly sending DE a picture of his city with his home building circled.

(i) They discussed DL's participation and recent message and the need for input from the Coordinator about whether or not to include DL's name on the report (DE>>"ok what's next?" JN>>"trouble....." >>:" DE>>"what is it?" JN>>"the team members section :#" DE>>"what is the problem with that?" JN>>"Did you get the note from DL today ?" DE>>"aawwww... yes, yes i did....." JN>>"I don't know what to do....." JN>>"I'm ***really*** mega upset about his participation here !" >>"But I don't want him to get zero, because he did help a lot before, and participated with you more than I did at the start (well for a day anyway)" JN>>"....but he's done zippo with this part.....:" DE>>"mmm, in the future will we e evaluate ourselves individually?" JN>>"[The Coordinator] offered no help....save to say go on with it.....don't know ?" JN>>"Bottom line.....do we put his name on this ?" DE>>"if , for example, you can evaluate me,and DL apart..." JN>>"Ask [the Coordinator]? He always replies real quick.....even in the middle of the night" DE>>"would you send him a mail?" JN>>"ok...wait..." DE>>"but what are we going to tell him?" DE>>"I'm very confused..." DE>>"did you see that comment [from DL's last message] about my MP3 file?" JN>>"si....?" DE>>"how do you call it when someone is trying to convince you ..." JN>>"great my mail's stuffed up again...it's just died on me....didn't like what I was writing maybe ????? hahahaha" DE>>"... using emotional matters?" >>"ha ha ha" JN>>"trying to convince me is what we call it, of course there's other words when you mean it in a bad way." DE>>"I mean it ina bad way.. ha ha ha ha" DE>>"In spanish we call it "chantaje emocional" , but there are not bad words..." >>"thats exactly what he's doing with me..." DE>>"would you try again?" DE>>"You're polite when you write mails to [the Coordinator].... I just can't do that... hahaha" DE>>"when i want to write something ... often it seems I'm "direct"..." DE>>"I just write what i feel... that's not good...." >>"ok ok ok , stop writing, DE. ... JN is not your pscycologis, hahahah" DE>>"hello..???" JN>>"I cpould be - seemed to do that a lot in my life...." >>"youshould get a 'polite' cc soon...." JN>>"In the meantime, let's move on please....." (j) JN directly emailed the Coordinator, with a copy to DE ("DE and I (team 7) are a little uncertain what to do about DLs participation. We got a note from him saying sorry (again) and he knows he'll score low for that. <p> He was good after he got back from Carnival, but recent participation has been virtually zero. <p> We don't want to write him off or cause him to fail, but do we add his name on our business plan or not ? <p> It's put us behind, as we were hoping to get in early for bonus marks, but only having 2 in the team puts us at a disadvantage to other teams. <p> We don't know what to do here. <p> Can you suggest action"). (k) Much later in the meeting, they decided to include DL's name on the report (JN>> "I'd like to put DL...but hmmm haven't heard from [the Coordinator] :(" [skip 3 entries] DE>> "forget about [the Coordinator] - lets include DL =)" JN>> "ok").

Saturday (Apr 15)

[DE logged in for 24 minutes around the time they had suggested (2 AM her local time). 13 minutes after she left, JN checked the chat room.] DL wrote via the listserve: "I am sendind this file with information about the brazilian mkt and my profile."

Chat Meeting – [Either DE or JN probably sent a direct email proposing this chat session. DE logged in 47 minutes before JN (11:30 AM her local time), and JN stayed logged in 24 minutes after DE left. They were in the chat room together for 10 hours 57 minutes. DL attempted to log in, but did not remain in the room for more than 4 minutes. Points (a) through (XX) occurred in the first 1 hour and 40 minutes, before that day's deadline for the bonus points.]

(a) Both DE and JN had been making changes to their own copies of the business plan. First, DE tried to send her copy directly to JN, which did not arrive quickly. Then, they agreed to use JN's file, which he sent directly to DE, and DE made her primarily formatting changes again.

(b) DE mentioned some information from DL; JN thought she was referring to the file DL sent though the listserve ("seen it - yay ! nothing new there really,.....:b"). DE forwarded it to JN (DE>> "I sent him an e-mail like 4 hours ago.. asking him to give me some info about xyz.." >> ".. and he answered like 2 hours later!" [skip 1 entry] JN 1107>>yeah great response time..... >>:(" DE>> "that's good! It's a pitty we did'nt know him a littre better.. i think..." DE>> "why that face, whats up?" >> ":)" JN>> "I already DLs info.....")

WEEK 8 (Apr 16 – Apr 22)

Sunday (Apr 16)

The Coordinator replied to JN ("This is a decision that should be made by the active members of the group. Do what you think is fair to all involved. <p> In my mind, his name should be included if he contributed something to the business plan. The question is how much is enough? If you look at the busines plan, can you tell something (e.g., a section) that he wrote or substantially developed the content? If yes, I would included his name on the report. If no, then I would not. Either way, you will be able to record your evaluation of his participation in the last survey, and this information will probably affect his grade.")

Monday (Apr 17)

The Coordinator wrote DE directly: “You sent your report to me twice. I will assume the files were the same and use the first message, unless you tell me to do something else.”

The Coordinator replied that the plan was received. The Coordinator sent messages later that day and on Friday (Apr 21) inviting the team to complete the exit survey. [DL commented on the survey: "XX"]

Tuesday (Apr 18)

JN replied directly to the Coordinator: “I thought this may occur, that is why I sent a note saying if it doesn't get through a copy is on our team site. <p> I did see that you had got it and sent us a "congratulations" note. <p> Thank you for the feedback.”

After Exercise

Over several months after the exercise, both DE and JN each sent messages directly to the Coordinator asking when the winner of the Exercise would be announced.

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Vita

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